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SECOND ANNUAL REPORT

OF THE

Live-Stock Sanitary Commission

AND

STATE VETERINARIAN

OF THE

STATE OF KANSAS.

PUBLISHED BY THE STATE BOARD OF AGRICULTURE.

TOPEKA:

KANSAS PUBLISHING HOUSE: T. D. THACHER, STATE PRINTER.

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REPORT.

HON. JOHN A. MARTIN, *Governor of the State of Kansas:*

SIR: In accordance with the provision contained in section 1 of the act of the Legislature of Kansas, approved March 24th, 1884, for the protection of domestic animals, we have the honor to submit herewith our second annual report.

The duties devolving upon our Board have necessitated the holding of thirteen meetings during the year; one at Manhattan, one at Great Bend, one at Baxter Springs, a session of one meeting at Lakin, and the remainder at Topeka.

Two reorganizations of the Board have occurred during the year: the first on account of the expiration of Mr. White's term of office; the second by reason of the resignation of W. A. Harris. The first vacancy was filled by the reappointment of J. T. White, and at the meeting of the Board held on April 9th, a reorganization was effected by the reëlection of W. A. Harris as chairman. The second vacancy was filled by the appointment of Harrison Kelley, who was elected chairman of the Board at the meeting held on June 22d.

It will be seen from the report of the State Veterinarian, which is respectfully transmitted herewith, that our State has been comparatively free from diseases of an infectious or contagious character during the year, with the two exceptions of hog cholera and glanders. That both of these diseases are on the increase, and that they entail heavy losses upon the people of the State, may be learned from the statistics presented in these reports. That these losses constitute a heavy drain upon the agricultural resources of the State, which is sensibly felt by all our business interests, is a fact needing no argument or illustration. That these diseases should be suppressed and prevented, as should all other dangerous maladies affecting the domestic animals, is the universal belief of all students of sanitary science. That these results can only be attained by the enforcement of judicious laws which shall regulate the introduction to the State of animals which are diseased, or which have been exposed to infection, and which shall prevent the movement of diseased or exposed animals within the State, are the conclusions reached by your Board after a mature and exhaustive study of the subject.

1885-1886

That our present laws relating to the contagious diseases of the domestic

animals are deficient in some respects, is evident from the fact that no authority exists whereby the greatest of our animal scourges—hog cholera—can in any way be controlled. Neither are the provisions of the general law sufficiently specific, in our opinion, to permit of the practical eradication of glanders from the State.

We feel it incumbent upon us, therefore, to offer such suggestions regarding the measures which should be adopted, looking to the prevention and suppression of these diseases, as to us seem practical of ready enforcement.

HOG CHOLERA.

As will be seen from the statistics collected by the State Veterinarian and submitted in his report, the losses from this disease for the year are variously estimated at from two to four millions of dollars. Even if the lowest estimate should cover all of the losses which we have experienced, they are much greater than the State should be called upon to bear, if there are any means by which these losses can be prevented. Judging from past experiences with this disease, the probabilities are that our losses reached their maximum from this outbreak during the year just ended; but that just as serious outbreaks will recur from time to time in the future, unless the spread of the disease is prevented by legislative measures, is a conclusion warranted by the history of this great plague.

That the disease is not curable by any of the means known to veterinary science, is conceded by all the ablest investigators of the subject; that the period of incubation in this malady is not longer than about fifteen days, certainly renders it one of the most easy against which quarantine measures may be successfully instituted. If, as our State Veterinarian believes, the disease is not indigenous to Kansas, an effective system of quarantine would undoubtedly keep the disease out of the State, and permit of the adoption of such suppressive measures as might be deemed necessary.

To accomplish these ends, proclamation should be issued against the introduction to the State of all swine affected with, or which have been exposed to the disease. To determine whether or not animals about to be brought into the State are infected, all swine should be inspected at the point of entry and held until the question can be determined. In summer time this detention would cover a period of not more than seven days, while in winter fifteen days' time would be necessary. All swine leaving quarantine grounds for the State should be carried only in such cars as had been thoroughly disinfected immediately before being used for that purpose. In case the disease appeared during the period of quarantine, the whole of the infected herd should be slaughtered at once without compensation to the owner.

It would probably be best to adopt no measures of suppression within the State until after due notice had been given that such measures would be enforced after a certain time. Then all swine found within the State that were infected with, or which had been exposed to, the disease, should

be destroyed without delay, and the premises so disinfected and quarantined that further spread of the disease could not happen. Since nearly all of the swine coming into the State enter either at St. Joseph, Atchison, Leavenworth, Kansas City or Fort Scott, quarantine stations at these points only would be necessary. The expense of maintaining such stations would not exceed a yearly outlay of over \$5,000. This sum would represent not more than one-fourth of one per cent. of our present yearly loss.

The only legislation necessary to enable the State to enforce such measures, is the repeal of section 22, chapter 2, Special Session Laws of 1884, which we most respectfully recommend be done.

GLANDERS.

So many petitions have been presented to this Board during the year, citing the prevalence of this disease in various communities, and praying for the immediate inspection of suspected animals, and their destruction if found diseased, that we believe some means should be provided whereby these demands may be complied with.

The many other imperative duties imposed on the State Veterinarian so engage his attention that no time is left in which to make the inspections demanded, and this Board has no authority to take any action in such cases until they have been reported upon by that officer.

The complaints made by a large number of persons that their animals are placed in quarantine by the sheriffs of the various counties and held there for months without an inspection as required by law, greatly to the inconvenience and detriment of the owners, and with more or less danger to the community, are but just, and it is the opinion of your Board that this condition of affairs ought not be permitted to continue longer. It can be remedied by provision being made, that when necessary one or more assistants may be employed, who are competent to render an opinion on this disease.

Forty-five cases of glanders and farcy have been reported to us by the State Veterinarian, of which three have been ordered killed, with the consent of the owners. Six others are held in quarantine by our order, while the remaining cases have not been acted upon, but left in the quarantine imposed by the State Veterinarian. The six cases before referred to are owned by Mr. D. E. Benedict, of Great Bend, and the circumstances connected with the outbreak are such as to have imposed exceptional hardships upon the owner. It seems that during the autumn and winter of 1884, Mr. Benedict lost some five or six animals from causes which did not at the time lead to the belief that the trouble was glanders. At the request of the Mayor and prominent citizens of Great Bend, the State Veterinarian inspected the suspected animals, and reported to our Board on the 22d of June, that he had found one case of glanders and three or four animals showing suspicious symptoms of the disease. On the 23d of July, two more cases were reported from the same stable, when, by direction of our Board, Mr.

Benedict was given notice that a hearing of his case would be had at Great Bend, on August 12th. At this time we witnessed a reëxamination of the stable by the State Veterinarian, who reported that two more animals had developed the disease, making a total of five infected. After hearing the case, the Board decided to hold all the infected animals in quarantine, and for this purpose employed Mr. Benedict, at a salary of \$40 per month, to carry into effect the orders of the Board. The horses showing no signs of the disease were released. At the last meeting of our Board, on December 17th, the State Veterinarian reported that one of the quarantined animals had died; that two new cases had been placed in quarantine, one of which was acute, and promised shortly to destroy the animal so infected. Some of these animals presented all the external appearances of health, and are undoubtedly capable of performing the usual labor required of like horses. To destroy these animals, which probably have no intrinsic value, but have a working value to their owner, without any compensation, would, in the opinion of this Board, be an act of injustice. And what is true regarding these cases, is true also regarding a majority of all the cases reported to our Board; for in most instances the party reporting his animals as glandered, is not capable of detecting the disease, and too often has been imposed on by some one who has not scrupled to sell an animal capable of destroying the life and property of his victim with one of the most loathsome diseases known.

Finally, it is the opinion of our Board that glanders and farcy can best be exterminated within the State by the adoption of a special statute on the subject, which will largely place the matter in the hands of the local authorities. We therefore recommend the bill, a draft of which was submitted in our last report, for consideration:

AN ACT to amend an act entitled "An act for the protection of domestic animals."

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. Whenever the state veterinarian shall discover a case of glanders or farcy among the domestic animals of the state, he shall issue to the sheriff of the county in which the said diseased animal is found, a written order to kill and bury the said animal, and to institute such quarantine, sanitary and police regulations on the exposed animals and infected premises as may be necessary to prevent the further spread of the disease.

SEC. 2. Whenever the sheriff of a county shall receive an order to kill, as provided in section one of this act, he shall, before executing such order, proceed to the infected locality and summons two disinterested freeholders, who together with the sheriff, shall constitute a board of appraisers. Before entering upon their duties the freeholders hereinbefore mentioned shall be sworn by the sheriff to make a true and faithful appraisement, without prejudice or favor, of the animal or animals ordered killed. The appraisers shall, after making their appraisement, return a certified copy thereof, together with the order of the state veterinarian, to the live-stock sanitary commission, who shall, if they find the amount correct and just, issue to the owner or owners of the animal or animals so killed a certificate showing the number and kind of animals killed, and the amount to which the holder is

entitled, and report the same to the auditor of state. And upon presentation of such certificate to the auditor, he shall draw his warrant on the treasurer for the amount therein stated, payable out of any money appropriated for the payment of such claims.

SEC. 3. The sheriff shall receive for performing the duties hereinbefore mentioned, such compensation as is provided by law for like services, and five (5) dollars additional for each horse, mule or ass killed and buried; and the appraisers provided for in section two of this act shall receive the sum of two dollars *per diem*, and mileage at the rate of ten cents per mile for the actual distance necessarily traveled in the performance of their prescribed duties, all of which sums shall be paid as other expenses of the sanitary commission are paid.

CONTAGIOUS PLEURO-PNEUMONIA OF CATTLE, AND QUARANTINE REGULATIONS.

At a meeting of our Board held in Topeka on March 13th, 1885, reports were received that contagious pleuro-pneumonia had made its appearance among the cattle at Fulton, Calloway county, Missouri. The serious danger to be apprehended from the prevalence of this disease so near to the borders of our State, demanded that all possible means should be used to determine the actual extent of the danger and the measures necessary to prevent the possible introduction of the disease into Kansas. We therefore directed our Secretary to learn, if possible, of all the infected localities known to the authorities of the different States, and to the Bureau of Animal Industry, and to report the same at the next meeting of our Board. Accordingly, at the next meeting on March 20th, our Secretary reported that the information received was not satisfactory, since it could not be learned what the true nature of the disease in Missouri was. We therefore directed the State Veterinarian to proceed at once to Fulton, Missouri, for the purpose of investigating the reported outbreak of disease at that point, and to make report to our Board at its next meeting. In accordance with these directions, at a meeting of the Commission held in Topeka on April 9th, the State Veterinarian submitted the following report:

"To the Live-Stock Sanitary Commission, State of Kansas—GENTLEMEN: In accordance with the directions which I received from your Honorable Board at the meeting held March 20th, 1885, I have the honor to submit herewith a report upon the investigations which I have made into the disease now existing at Fulton, Missouri, and which was reported to your Board as being contagious pleuro-pneumonia.

"On March 25th I proceeded to Fulton, where I remained, at the request of his Excellency Gov. Marmaduke, until March 31st. I found that in July, 1884, the authorities of the State Insane Asylum at Fulton, Missouri, had purchased of the Messrs. Tripp, of Peoria, Illinois, a Jersey bull which had been exposed to pleuro-pneumonia. In so far as the authorities knew, this bull had never shown any signs of sickness, yet during the winter several of the cows in the Asylum herd had sickened and died. Some post-mortem examinations which had been made led to the belief that the disease was contagious pleuro-pneumonia. The Bureau of Animal Industry being so informed, Dr. M. R. Trumbower was sent to Fulton to make an investiga-

tion. I found him there on my arrival, and from him learned the following facts: On reaching Fulton he had inspected the herd, and pronounced the disease to be pleuro-pneumonia. The bull from Illinois and other of the sick animals were killed and a post-mortem examination held, the results of which confirmed the diagnosis. I was informed by the authorities that they had determined to slaughter the entire herd. Accordingly, I remained and witnessed the post-mortem examinations, which were made on all that were destroyed. More than seventy animals were killed, nearly all of which showed that they were infected with the disease. From the post-mortem lesions seen, there remains no shadow of doubt but that this is contagious pleuro-pneumonia, for some of the cases were as well marked and typical as I have ever seen. To what extent cattle outside of the Asylum herd have been exposed, is not yet fully known, but it is the opinion of Dr. Trumbower, who has been investigating the matter, that probably 1,000 head may have had an opportunity to become infected. In so far as I could learn, no animal known to have been exposed has ever left the county of Calloway. At a mass meeting held in Fulton on the 31st of March, at which I was present, the measures and means necessary for the suppression of the disease were being considered, and I was assured by Gov. Marmaduke that the disease would not be permitted to spread from the locality now infected. In view of the grave danger which exists by reason of the close proximity of the infected locality to the important highways of traffic across the State of Missouri, and of the fact that the commerce between Missouri and Kansas in stock cattle is so large and intimate, I believe the possibility exists of the herds of this State becoming infected with this disease from this source; and for the proper protection of our interests I beg to recommend that no cattle from the counties of Calloway, Montgomery, Boone and Audrain be permitted to enter Kansas unless quarantined at the point of entry for a period of ninety days.

A. A. HOLCOMBE, *State Veterinarian.*"

After a full consideration of the matter, we directed our secretary to transmit to your Excellency the following preamble and resolutions, to wit:

"Whereas, Contagious pluro-pneumonia of cattle has made progress during the past few months in infecting new localities in close proximity to highways of cattle traffic between this and other States, thereby seriously endangering the large live-stock interests of the State of Kansas by the probable introduction of the said disease among our herds; and

"Whereas, Such a calamity would prove most disastrous to the best interests of our State, by depreciating the value of all cattle, and by the restriction of our intercourse with the markets of the world: therefore, be it

"Resolved, That we, the Live-Stock Sanitary Commission of the State of Kansas, do hereby request his Excellency the Governor of Kansas to issue a proclamation of quarantine against the introduction into this State of all animals of the bovine species coming from the following-named places, to wit: All of the State of Connecticut, all of that portion of New York lying south of the north line of the State of Connecticut, all of Pennsylvania, New Jersey, Delaware, Maryland, the District of Columbia, Virginia, West Virginia, Ohio, Illinois, Kentucky, Tennessee, and the counties of Calloway, Boone, Audrain and Montgomery in the State of Missouri, unless such cattle are quarantined at the point or locality of introduction into the State for a period of ninety days, and retained there until they shall receive a certificate of health signed by the State Veterinarian. And be it further

"Resolved, That all cattle coming into the State from the above-named lo-

calities, be required to enter the State at Atchison, Kansas City, or Fort Scott."

The quarantine proclamation issued by your Excellency, on April 15th, 1885, in response to this request, and the subsequent one issued on April 28th following, placed so great a restriction upon the commerce between this and other States, that our Board believed the interests of the State could be effectually guarded, and commerce in cattle largely restored, by admitting all cattle coming from excepted districts which could show a clean bill of health, and the probability that they had never been exposed to the disease. In this opinion your Excellency expressed concurrence. Therefore, at a meeting of our Board held on May 2d, 1885, the following rules and regulations governing the admission of cattle to the State coming from quarantined districts, were adopted:

"RULES AND REGULATIONS GOVERNING QUARANTINE AND THE ADMISSION OF CATTLE INTO KANSAS.

STATE VETERINARIAN'S OFFICE, }
TOPEKA, KANSAS, May 2, 1885, }

"Whereas, The Governor of Kansas did, by proclamation, on the 15th day of April, 1885, 'declare and establish a quarantine against the introduction of all animals of the bovine species from the following-named places, to wit: All of the State of Connecticut, all of that portion of New York lying south of the north line of the State of Connecticut, all of Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia, Virginia, West Virginia, Ohio, Illinois, Kentucky, Tennessee, and the counties of Calloway, Boone, Audrain and Montgomery in the State of Missouri;' and did, on April 28th, 1885, by further proclamation, extend said quarantine so as to include the whole of the State of Missouri, unless all such cattle coming from the above-named localities are quarantined at the point of introduction for a period of ninety days, and retained there until they shall receive a certificate of health signed by the State Veterinarian of Kansas; and further, that all cattle coming into Kansas from the above-named localities be required to enter the State at Atchison, Leavenworth, Kansas City, or Fort Scott:

"Now, therefore, we, the Live-Stock Sanitary Commission of the State of Kansas, do hereby promulgate the following rules and regulations governing quarantine and the admission of cattle into Kansas from the above-named localities, to wit:

"First—All cattle coming into this State from localities quarantined against, will be required to furnish the following evidences that they are free from disease:

"(a) Certificate of health, signed by the State Veterinarian of the State from which they came, or by a Veterinary Inspector of the Bureau of Animal Industry, or in States where neither of these officers exist, by a Veterinary Inspector named by the Governor of said State.

"(b) Affidavit of two disinterested parties that they have known the cattle in question for a period of four months prior to the date of shipment; that they have been healthy and exposed to no contagious disease; and that no contagious disease is known or believed to exist in the county from which they come.

“(c) Certificate of county clerk of said county, that parties making such affidavit are responsible and reputable citizens of the county.

“(d) Affidavit of owner, made at point of entry, that his cattle are the identical cattle described in the foregoing affidavits and certificates; that shipment has been direct and without unloading, except for feed and water, and in cleansed and disinfected cars.

“(e) Affidavit of owner that the cattle will be kept separate and apart from all cattle belonging to other parties, for a period of 90 days.

“(f) All the foregoing evidence to be submitted, at the point of entry, to the Live-Stock Sanitary Commission, the State Veterinarian, or an authorized inspector of the State, when permit for shipment may be issued.

“Second—On all cattle inspected and receiving permit for shipment, a fee of 50 cents a head will be charged.

“Third—No railway company doing business in this State will receive for shipment into the State, any cattle coming from the quarantined localities unless accompanied by the aforesaid permit.

“Fourth—Cattle not receiving permits, and placed in quarantine in accordance with the provisions of the Governor’s proclamation, will be held at the expense of the owner, subject to such rules and regulations as the Sanitary Commission may prescribe.

“EXTRACT FROM CHAP. 2, SPECIAL SESSION LAWS OF 1884.

“SEC. 21. Except as otherwise provided in this act, any person who shall violate, disregard or evade, or attempt to violate, disregard or evade, any of the provisions of this act; or who shall violate, disregard or evade, or attempt to violate, disregard or evade, any of the rules, regulations, orders or directions of the Live-Stock Sanitary Commission establishing and governing quarantine, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than one hundred nor more than five thousand dollars.’

“By order of the Live-Stock Sanitary Commission, State of Kansas.

A. A. HOLCOMBE, *Secretary.*”

That these modifications of the quarantine proclaimed were unattended with any serious degree of danger, is shown by the fact that our State has remained free from the disease. That they were necessary for the proper maintenance of legitimate traffic, is made apparent by the fact that these or similar modifications were made by nearly or all other States and Territories which imposed restrictions on the movement of cattle from infected localities. At the same time, these modifications of our quarantine greatly reduced the expense of maintaining quarantine stations; for no animals have demanded admittance which it has been deemed necessary to hold in quarantine for the prescribed ninety days at the point of entry, and as a consequence quarantine grounds, buildings, etc., have not been provided as yet.

It became necessary, however, that inspectors should be placed at the three important points of entry: Atchison, Kansas City, and Fort Scott. The expense of maintaining these stations has been as follows: Atchison, \$406.90; Kansas City, \$746.01; Fort Scott, \$459.13; total, \$1,612.04. Of this amount \$487.04 was paid out of the fund created by assessing all cattle entering the State from quarantined districts; the remainder has been paid from the appropriation made to defray the expenses of the Sanitary Commission, etc.

Since quarantine has been raised against the States of Ohio, Illinois, and Missouri, as recommended to your Excellency by this Board, and inasmuch

as nearly all cattle coming into the State at this time, from quarantined localities, come through Kansas City, we believe that an inspector at this point only, is now necessary. For these reasons but one inspector has been in the employ of the State since September 1. Cattle desiring to enter the State at other points are inspected by the State Veterinarian, so that no considerable delay or inconvenience results from the discontinuing of inspectors at the other stations.

The number of cattle which have entered the State to date from quarantined districts is 1,383. Of this number, 1,010 came from Missouri, 146 from Illinois, 130 from Kentucky, 76 from Ohio, 18 from Pennsylvania, 2 from Tennessee, and 1 from Connecticut.

Considering how great a loss Missouri sustained by reason of the outbreak of this disease within her borders, the great depression of prices on Kentucky cattle as a consequence of her present infection, the constant danger to which we are exposed when no restrictions are placed on the free movement of cattle from infected localities, and the great loss our State would sustain should an outbreak of this disease occur within our borders, we are of the opinion that the utmost vigilance should be maintained in preventing infection. The necessary safeguards for the protection of our interests in this respect can be continued at a small expense to the State, which is many times repaid by the standing of our cattle in the markets of the world.

THE DISINFECTION OF CARS.

Believing that more or less danger of infection of live-stock always exists from the exposure to which they are subjected when carried in cars used indiscriminately in transporting stock of all kinds, at a meeting of the Board held May 2 the following order to all railroad companies doing business in the State was issued:

"To the General Manager _____ Railroad Co., _____:

"SIR—Whereas, it is the opinion of the Live-Stock Sanitary Commission of the State of Kansas that it is necessary for the prevention of the spread of contagious and infectious diseases, that no cars shall be used or offered for use for transporting stock in this State, unless such cars shall have been thoroughly cleansed and disinfected:

"Therefore, you are hereby directed and ordered, in accordance with the provisions of sec. 8, chap. 2, Special Session Laws of Kansas, 1884, to cleanse and disinfect all cars used or offered for use by the _____ Railroad Co. in this State for transporting stock on and after receipt of this order. Points selected for cleaning such cars shall be inaccessible to all animals. After thorough cleaning, proper disinfection shall consist of the free use of steam, dilute carbolic acid, dilute sulphuric acid, or chloride of lime. Please inform this Board of the places selected for the cleaning contemplated in this order.

"By order of the Sanitary Commission, State of Kansas.

"Dated: TOPEKA, KANSAS, May 2, 1885.

A. A. HOLCOMBE, Secretary."

This order of the Board has been very generally complied with by the various officials to which it was addressed. Of course there are occasional

instances in which it is not possible to adopt these measures without very serious inconvenience and expense, but to all intents and purposes the general cleaning and disinfection of stock cars can be made reasonably effective without entailing unreasonable expense, much labor, or great delay and inconvenience. During the prevalence of epizoötic diseases, we are of the opinion that such measures will assist in preventing their further spread, thereby proving advantageous to both shipper and carrier.

TEXAS FEVER.

The enactment of a new law by the last Legislature on the subject of Texas fever, the provisions of which largely imposed the enforcement of the act on the Sanitary Commission, has added somewhat to our duties, but with results which will prove, we believe, most gratifying to the people of the State. In anticipation of the difficulties which might arise in the performance of our duties under this law, and for the purpose of determining clearly how we should proceed, the following letter was addressed to the honorable Attorney General of State:

"TOPEKA, KANSAS, March 17, 1885.

"To the Attorney General, State of Kansas, Topeka, Kansas—SIR: I am directed by the Live-Stock Sanitary Commission of the State of Kansas to request your opinion on the following points in 'An act for the protection of cattle against Texas, splenic or Spanish fever, and repealing chapter 3 of the Special Session Laws of 1884,' approved March 7th, 1885, to wit:

"1st. When cattle are in quarantine as provided in section 3, can the owner replevy them and continue to drive them within or through the State or ship them out of the State?

"2d. Is the *prima facie* evidence named in section 5, sufficient evidence on which the Commission may issue their order to the sheriff as contemplated in section 3?

"3d. What will constitute a proper certificate as contemplated in the first proviso of section 5?

"By order of the Live-Stock Sanitary Commission, State of Kansas.

A. A. HOLCOMBE, *Secretary.*

To these inquiries we received the following reply:

"1st. When cattle are in quarantine as provided in section 3 of the Texas-fever act, the owner cannot maintain replevin. Such cattle are *in custodia legis*. Perhaps the owner might, by enjoining the quarantine, get the cattle across the State notwithstanding the law, but he would have to give bond to pay all damages that might accrue by reason of the injunction.

"2d. Whatever satisfies the Board that certain cattle are capable of communicating the Texas fever, whether the *prima facie* evidence, spoken of in section 5, or other competent evidence, will authorize the action of the Board contemplated in section 3.

"3d. The certificate inquired about should very properly be the affidavit of one or more persons who know the facts required to be certified.

S. B. BRADFORD."

In accordance with this opinion, the Board decided that the certificate contemplated in section 5 should consist of the affidavits of the president

and secretary of the cattle association covering the territory where the cattle were held the previous winter, or the affidavits of the sheriff and county clerk of the county from which the cattle came, showing the necessary facts.

In June several reports were received that many southern cattle had entered, and were contemplating entering, the State on their way north. These reports gave rise to much uneasiness and apprehension among the citizens of the western counties. In accordance with the request of your Excellency, a meeting of our Board was held on June 22d, for the purpose of considering the matter, at which time it was decided that the Board would investigate the reported violations of the law by visiting the counties from which complaints had been received. For this purpose we proceeded to Dodge City, Garden City and Lakin, where we learned that all herds which were known to be within the State were from localities north of the Texas-fever district. To prevent if possible, the entry of dangerous herds, we deemed it necessary that an agent of the Board should be stationed on the frontier at a point where such cattle were most likely to enter the State. We accordingly appointed an inspector at a salary of \$50 per month, and stationed him on the south line of the State, in Seward county, with instructions to report at once the entry of any cattle coming from south of the line established by the law as bounding the territory from which cattle were believed to be healthy.

In consequence of the proclamation issued by your Excellency on July 21st, the following circular letter was issued by our Board:

"OFFICE OF THE LIVE-STOCK SANITARY COMMISSION, }
"TOPEKA, KANSAS, July 28, 1885. }

"To the Sheriff, Deputy Sheriffs, Under-Sheriffs, and all Constables, of the County of _____, State of Kansas: Whereas, his Excellency the Governor of Kansas, in a proclamation dated July 21, 1885, has directed all sheriffs, deputy sheriffs, under-sheriffs and constables within this State to promptly take charge of and restrain any cattle driven into, or attempted to be driven through, any county where such officer resides, the said cattle having come into the State from south of the 37th parallel of north latitude; and whereas, the Live-Stock Sanitary Commission is directed, in the same proclamation, to adopt effective regulations enforcing the provisions of chapter 191, Session Laws of the State of Kansas of 1885:

"Now, therefore, we, the Live-Stock Sanitary Commission of the State of Kansas, do hereby direct that whenever you have notice or knowledge that there are within your county cattle coming from south of the 37th parallel of north latitude, you forthwith take charge of and restrain such cattle, under such temporary quarantine regulations as will prevent the communication of disease, and make immediate report to this Commission.

"You will notify the owners or persons in charge of such cattle to be ready to show to this Commission, at such time and place as they may designate, where the said cattle have been held since the first day of December, 1884.

"You will hold all cattle so quarantined until released by order of this Commission, and incur no more expense than is absolutely necessary. All

expenses necessarily incurred by you while acting under the provisions of chapter 191, Session Laws of 1885, will be paid as provided for in section 3 of said law.

"By order of the Live-Stock Sanitary Commission of the State of Kansas.
"A. A. HOLCOMBE, *Secretary.*"

Under these instructions a number of animals, suffering from Texas fever contracted while grazing in the Indian Territory, were taken and held by the officers of Cherokee county, and a hearing given the owners on August 21st, at a meeting of the Board held in Baxter Springs. All of these animals were released by the Board, since they were not capable of transmitting the disease.

In so far as we know, no violation of the law relating to this disease has taken place during the year; and as will be seen by the report of the State Veterinarian, all cases of the disease reported in the State have resulted from exposure to the infection while the animals were beyond our borders.

HARRISON KELLEY,
J. W. HAMILTON,
J. T. WHITE,
Sanitary Commissioners.

TOPEKA, KANSAS, December 31, 1885.

REPORT OF THE STATE VETERINARIAN.

To the Live-Stock Sanitary Commission of the State of Kansas:

GENTLEMEN—I have the honor to submit herewith the annual report of the State Veterinarian for the year ending December 31st, 1885.

The State, during the year, has been comparatively free from contagious and infectious diseases of a malignant character, with the two exceptions of hog cholera and glanders. The unusual prevalence, however, of these two diseases, and the maintaining of quarantine regulations against certain States infected with contagious pleuro-pneumonia of cattle, have imposed more duties on this office than can be performed by one man. The almost constant attention which had to be devoted to quarantine matters during several of the summer months, largely prevented that attention to the inspection of diseased animals within the State which is expected of this office. It is impossible to answer in person all the calls made for the services of the State Veterinarian; consequently I have been guided largely during the year by the expressed wish of his Excellency the Governor, and the directions of your Honorable Board, in the performance of such duties as were believed to be most important for the welfare of the whole State. But any course adopted which did not include an early inspection of all cases of contagious disease which were reported, would necessarily give rise to much inconvenience and discontent upon the part of the public demanding the services of an official to which they were entitled. The wrongs and hardships which these unavoidable delays in answering calls produce, will be considered more fully when treating on the subject of glanders, the cases wherein most of these complaints arise.

During the year more than 1,200 communications have been received, exclusive of the bills of health, etc., which accompany cattle entering the State, and coming from localities against which quarantine regulations exist. These communications are on file, and relate to the following subjects: 454 to glanders and farcy; 101 to hog cholera; 317 to quarantine matters; 67 to black-leg in cattle; 26 to Texas fever; 15 to diseases of sheep, and the remainder to other diseases and miscellaneous matters pertaining to the duties of the office.

Nine hundred and thirty-six letters have been written and sent out by mail, besides innumerable reports, circulars, proclamations, quarantine rules, etc. The time required to give this correspondence necessary attention, ought largely to be devoted to the performance of other duties.

More than 13,000 animals have been inspected by me during the year, a majority of which have been cattle. To perform these services has required an amount of traveling in excess of that for the previous year.

CONTAGIOUS PLEURO-PNEUMONIA, AND QUARANTINE MATTERS.

The State is still free from infection by contagious pleuro-pneumonia, and I have no doubt will remain so while the present system of quarantine is maintained. The reported outbreak of the disease, however, during the early part of the year, at Fulton, Missouri, gave rise very justly to a feeling of apprehension that the whole cattle industry of the State was in imminent danger. In accordance with the instructions of your Board, dated March 20, 1885, I visited Calloway county, Missouri, on the 25th of that month, and remained until the 31st, for the purpose of learning the nature and extent of the outbreak. Having found the disease more prevalent than was anticipated, I reported the facts to your Board on April 9, and recommended that quarantine against all known infected localities be established at once. The quarantine proclaimed by his Excellency the Governor of Kansas on the 15th and 28th of April, made necessary the adoption of suitable rules and regulations for the control of cattle coming into the State from localities quarantined against. These rules and regulations were consequently issued on the 2d of May, and their enforcement largely intrusted to this office, with the assistance of the inspectors which your Board appointed. Each inspector has been required to make weekly reports to this office of all cattle receiving his permit for entry to the State, together with the number of animals in each shipment, their destination, and the name of the owner. All bills of health, affidavits showing where cattle came from, and descriptive lists, have been preserved, and are on file in this office. These papers show that 1,383 animals have come from the various quarantined districts, and entered the State. The fees received from these cattle aggregate \$681.50. On the plea of poverty, twenty head were admitted without the payment of the prescribed fee. The money in this fund has been disbursed on the order of your Board as follows: To Inspector E. R. Allen, for salary and incidental expenses, \$330.14; to E. H. Sharrard, inspector, for salary and incidental expenses, \$156.90; to M. R. Trumbower, inspector, salary, \$100; to A. R. Beatty, inspector, for salary, \$50; for printing quarantine blanks, \$7.50; leaving a balance in my hands of \$36.96.

I have endeavored to so enforce the rules and regulations which you have adopted, that there should be no question as to the full protection of the interests of the State, and at the same time have aimed to impose no unnecessary burden or requirements upon parties bringing healthy cattle into the State. In this effort I have been very generously assisted by the public, and ably seconded by the inspectors which you have placed in charge of our quarantine stations. I beg the privilege to commend, in particular, at this time, the courteous and efficient service rendered by Inspector E. R. Allen, formerly stationed at Fort Scott, but now in charge of the station

at Kansas City, and to acknowledge our obligations to the various stock-yards for courtesies shown.

During the latter part of summer and through the autumn many immigrants came to the State from localities quarantined against, who brought with them one or more cows. As a rule, these parties were unaware of the existence of quarantine regulations, and consequently arrived upon our borders without the evidence (demanded by your rules and regulations) to show the healthy condition of their cattle. To hold such cattle, under these circumstances, while the owners wrote or returned for bills of health and evidence to show that their cattle had never been exposed to pleuro-pneumonia, imposed a hardship which the immigrant could illy afford. Consequently, in these cases we have simply required the owner to make affidavit as to where his cattle came from, how long he had known them, his destination, and a promise under oath that he would hold them apart from other cattle for ninety days. This course of action has been approved by his Excellency the Governor, and by the individual members of your Board. I have no doubt that it is unattended with any serious degree of danger.

Of the cattle presented for inspection at the various points of entry provided for in the quarantine proclamation, not one has been found showing signs of pleuro-pneumonia. A few small shipments have come from dangerous localities, without sufficient evidence to warrant the conclusion that they had never been exposed to the disease, and they have been refused admittance unless they would undergo the prescribed ninety days of quarantine. In every instance this has been declined by the owners, and the cattle have not entered the State. I am not aware that any of these cattle have since developed the disease, but the simple fact that cattle come to our borders under such circumstances is, within itself, sufficient cause for constant guard against their introduction.

No flagrant violation of our quarantine regulations is known or believed to have occurred. That some cattle have been driven across our borders without inspection, I have no doubt, for it is not possible to effectively guard our entire eastern border; but I believe that all such cattle were brought into the State without a compliance with our regulations simply to escape the delays consequent on an inspection made at established points of entry, often difficult to reach from certain parts of our border, and not because such cattle were unhealthy.

That the maintenance of quarantine regulations by the State imposes a serious restriction upon the commerce in cattle, is not to be denied, but that such regulations are imperative, under present circumstances, is equally true. The restrictions which such action by the various States has imposed have done more than all other causes combined to educate the public to the necessity for uniform rules and regulations of quarantine among the different States and Territories, and the urgent need for such national legislation as

will confine this disease to its present limits and there suppress it at whatever cost may be necessary.

The experience which the State of Missouri has undergone in this disease, during the past year, wherein a loss of more than \$2,000,000 was sustained, and the estimated loss of \$12,000,000 to the State of Kentucky by reason of the outbreak within her borders, are incidents which should warn us of the danger to be apprehended from the possible introduction of the disease to Kansas. With proper vigilance, I believe the State will escape infection. I therefore most urgently recommend that our present quarantine regulations against all known infected localities be continued.

HOG CHOLERA.

The immense losses which this terrible scourge has inflicted on the swine industry of the State during the year are simply appalling. Nearly every county in the eastern half of the State has become infected with the disease, and it is rapidly working its way westward, having at last reports made its appearance in Pawnee county in the southwest, and in Osborne county in the northwest. There being no natural barriers to its further progress in all directions, I am at a loss to know how the widespread destruction of property which it entails is to be avoided without the adoption of compulsory sanitary regulations. But before suggesting the measures which I believe are necessary for the proper protection of the swine of the State, I beg to review, briefly, the history of the present outbreak, to present the reasons why the disease is hog cholera and not something new; and to submit the statistics I have been able to gather, showing how great the losses have been during the year.

HISTORY OF THE OUTBREAK.

During the few years which immediately preceded 1883, it was very generally believed that hog cholera had nearly if not quite become extinct within the State. In the early summer of 1883, I witnessed an outbreak of the disease in Jefferson county, and further learned during the autumn that several localities were infected in the eastern part of the State. The cold weather of the following winter of course arrested its ravages for the time being, but early in the summer of 1884 it reappeared with increased violence, and soon infected at least thirty of our most prominent swine-raising counties. The losses reported to this office, which represented but a small portion of the actual losses sustained, exceeded a hundred thousand dollars. Having secured such a strong foothold within the State during that year, the advent of warm weather in 1885 served to stimulate its still further spread, until now at least fifty-eight counties are infected, and our losses have reached the millions.

THE CAUSES OF THE DISEASE.

It might perhaps be considered out of place to discuss the theories of the laity regarding the causes of this disease in a report of this kind, and my

only excuse therefor is to be found in the desire I entertain to so present the matter that sanitary laws may be adopted which will effectually prevent the further spread of the disease, and suppress it within the State. This, I believe, can only be accomplished by furnishing facts in juxtaposition with the fallacies of the various theories regarding the disease, which have a hold more or less strong upon the minds of many of our people.

As is usual in any calamity, nearly everyone has his theory as to the cause or causes of hog cholera, and a remedy therefor. The very general prevalence of the disease throughout a large portion of our country seems to have developed a wonderful amount of medical knowledge and a genius for originating "unfailing specifics" never before seen among the would-be "hog doctors." But strange as it may seem, those who profess to know the most about the disease, and particularly its causes and cure, are those who never before had given any thought to the pathology of diseases or the science of therapeutics. The claims made by these embryo investigators vary in absurdity, from the statement of one that he "had cured the disease, for he had seen it come from the sick animal, but that in curing the first disease he had produced another which he could not cure," to the discovery of another that "the trouble is nothing but measles, and if it can be 'brought out' the patient will recover." On the other hand, not one of all the many eminent investigators of this disease has ventured to say that he could cure it, notwithstanding he brought to his aid a lifetime of scientific study, supplemented with all the appliances for thorough investigation and experiment which experience and inventive genius have supplied.

But however barren of immediate practical results these illy-directed experiments of the many may prove, they serve a good purpose ultimately in teaching the public that specific contagious diseases are more easily and cheaply prevented than cured.

THE LUNG-WORM AS A CAUSE OF HOG CHOLERA.

Perhaps the most popular idea in the State at this time, as regards this disease, is the belief that it is due to the presence of the lung-worm (*Strongylus contortus*). This belief is entertained not only by the laity, but by many physicians. It seems that the simple fact of sometimes finding these worms in the lungs and in the intestines of diseased animals, has led the believers in this theory to the conclusion that of necessity they were the cause of the disease. But a brief review of the history of this parasite and the conditions which it may cause by gaining access to the lungs of swine, will serve to show the fallacy of the argument that it has any part in the producing cause of cholera.

The full life history of the strongylus is probably unknown, but that part of its existence spent in the bodies of swine, has been learned. When this parasite is taken into the stomach along with food, the female deposits her eggs, which in time hatch out very small strongyli. These young parasites, by piercing the soft tissues, gain access to the blood vessels, and in

the current of blood are carried to the lungs. Here they permeate the tissues again, to find lodgment in the bronchial tubes and air cells, where they grow and multiply indefinitely. By their irritation, especially when present in large numbers, they induce inflammation of the bronchial mucous membrane and even of the lung substance proper. Now an attack of bronchitis from this cause is characterized by conditions and circumstances quite unlike hog cholera in many particulars. To begin with, old or full-grown animals are but rarely seriously affected by the presence of these worms; in fact, it is not unusual to find them in fat animals slaughtered for food, where their presence could not even have been reasonably suspected during life; it is the poorest and younger ones that take the trouble first; one or two develop the malady at a time, so that it requires a long period to infect a whole herd; the affected ones cough for days or weeks before becoming seriously ill; there is no apparent well-defined period of incubation; the weakest die first, and finally only those die which have large numbers of these parasites in their lungs.

But how different are the conditions attendant on cholera. In this disease old and young alike die, although the mortality is greatest in the young; the period of incubation is both short and well defined, ranging from four to fifteen days according to the weather. In winter time cholera almost ceases its ravages, while the lung-worm at this season kills nearly all of its younger victims. Cholera nearly always kills the fattest and best of the herd first, not the poorest; thousands die without a worm in the lungs and without a cough; many die in from twelve to forty-eight hours after the first appearance of the disease; many others die with no other lesions than the great ulcerated patches found on the inner surface of the bowels, and that, too, without the presence of a single worm to account for the condition; still others die with large pieces of flesh sloughing from their sides, or with the loss of parts of one or both ears; nearly all the victims of this disease show marked discolorations of the softer skin found under the belly, between the legs and around the neck; and lastly, it is not unusual to find thirty, forty or fifty animals die in a day from an infected herd numbering two or three hundred head. Surely, then, the two diseases are produced by different causes; and while it is true that both exist in Kansas, it is not very difficult to distinguish one from the other.

IS IT CONTAGIOUS PLEURO-PNEUMONIA?

During the early summer the impression prevailed generally throughout many counties within the State that this disease was not the old-fashioned cholera, but something new in the way of a pneumonia or pleuro-pneumonia. A lack of knowledge of the medical history of the disease, coupled with the fact that in making post-mortem examinations, disease of the lungs was found and the lesions of the bowels overlooked, must account for this belief. It is only necessary to go back a few years to find some of the ablest investigators characterizing this disease as pneumonia or pneumo-

enteritis, on account of the universal presence of lesions in one or both sets of these organs. But these names have been discarded because they were misleading, and the term hog cholera is generally used because it means nothing in particular and is generally understood to designate the one great plague to which our swine are subject. On these grounds, then, the disease is not to be considered as something new.

IS IT MEASLES?

Very recently the statement has gone abroad that the disease among our Kansas swine is nothing but the measles, but it seems evident that whoever originated this statement either never saw a case of measles in the pig, or never saw the cholera. It is enough to say in this connection that measles in the pig are caused by the parasite which, when taken into the stomach of the human being, along with diseased pork, develops into the tape worm; that the disease is not seen in swine over a year old; that it rarely causes death; that it takes the parasite two and one-half months to fully develop; that these parasites are found only in the muscular tissues of the affected animal, and that they do not cause red spots, or an eruption upon the skin as seen in human measles; and lastly, that this disease is not in fact contagious from pig to pig.

IS IT CAUSED BY HIGH FEEDING, POOR FEEDING, FILTHY SURROUNDINGS, OR CLOSE INBREEDING?

So much has been said, particularly by some of the agricultural journals, in the way of advice as to how the cholera could be kept out of the herd by judicious feeding and clean quarters, that I deem it of importance to show that hygienic conditions have but little influence on the mortality produced by this disease, and nothing whatever in causing it.

In the first place, it matters not how rich and stimulating, or how poor and innutritious, the food supply may be, the important fact remains, undisputed by reliable evidence, that hog cholera never appears in a neighborhood remote from infected localities, except upon the advent of swine brought from some distant point, which swine had been exposed to the disease before or during the journey. That the fattest animals in a herd are the ones most susceptible to infection, I concede, and this is sufficient bar to the claim that the disease is caused from want of proper food; but it matters not whether the condition of thrift is produced by corn, oats, rye, bran, slops, or clover, for if the disease makes its appearance it respects the flesh put on by none of these agents, but kills alike the animal that has spent his life eating corn and sleeping in a clean pen; the one that revels in clover pastures and spring brooks, as well as the back-door scavenger that roots for a living. During the past summer I have seen the disease under all possible conditions, and with but little variation in the attendant mortality. In Osage county, one gentleman lost nearly all of his hogs while they were running in a fine clover pasture at the head of a spring stream; another, in Reno county, had a like experience with his herd which was watered from a well

and fed upon oats growing in the field; another, in the same county, treated his herd to corn and a rye-field, with no better results; another, in Brown county, turned his hogs loose in an 80-acre cornfield, with spring water, and his mortality reached about 90 per cent. of the herd; another, in Jackson county, penned his herd, fed corn, slops, and the charred carcasses of the dead, with a mortality of 60 per cent.; while another, in Elk county, turned his swine into the timber adjoining a corn-field, and left them to "rustle for themselves," and at last reports he was only able to find alive 6 per cent. of the herd.

As to whether close inbreeding makes the product more susceptible to infection, or less able to withstand the disease, I am not prepared to say—it certainly has nothing to do with the cause of the disease.

WHY THE DISEASE IN KANSAS IS THE SO-CALLED CHOLERA.

Whether the disease affecting the swine of this State should be called hog cholera, swine-plague, or by some other name, is not a very material question to the breeder. He is more interested in learning the cause of the trouble, and how to prevent it; for the disease is just as destructive under one name as under another—having during the past summer reached just as high a mortality in Reno county, where it was called pneumonia, as in Johnson county, where they called it worms, or in Brown county, where they admitted it to be genuine cholera. Nor was this great mortality confined alone to Kansas, for Ohio, Illinois, Iowa, Missouri and Nebraska lost heavily from the same disease.

If we accept the simple facts regarding cholera, as described by all authorities on the subject, and compare our Kansas disease with those facts, we shall have no trouble in reaching the conclusion that the two diseases are identical. To begin with, the so-called cholera is conceded to be highly contagious, and to have a well-marked period of incubation; not originated spontaneously; readily spread by means of the infected animal, dead carcasses, running streams on which infected herds are held, the washings from infected grounds; by the cleanings from cars used to carry swine; by infected cars and stock-yards; by dogs, cats, rats, crows, the air, and by the clothing of persons who come in contact with the virus of the disease. Furthermore, it is conceded that this malady is characterized by marked lesions of the lungs, bowels, and skin, which give rise to the symptoms of fever, sore eyes, coughing, diarrhoea or constipation, red or purple discolorations of the skin, sloughing of certain parts, rapid emaciation, and death.

Probably in no outbreak of this disease do *all* of these conditions and symptoms appear in one and the same animal; but if the disease is studied in its entirety, as found in an infected neighborhood, all of these characteristics will be found. And just here is where the difficulty arose regarding the identity of the disease in this State. Some one who had seen the cholera in Illinois, years ago, would insist that then his hogs had diarrhoea, while now they were constipated; that then the sick all died within three or four

days' time, while now some would live a week or two; that then the lungs were all right, while now they were all wrong; that then he found no lung-worms, while now they were plenty, and that consequently this could not be the old-fashioned cholera.

But the fact remains, that in none of the many infected localities which I have visited during the past year, have I failed to find all the symptoms, conditions and lesions described as belonging to hog cholera, as I have seen it in the eastern States. True, a *post-mortem* examination, made on one case, would show but a part of all the diseased changes which characterize cholera, but when these examinations covered a large number of cases, nothing was found wanting to prove the identity of this disease with cholera.

Furthermore, in every instance where I could devote the necessary time thereto, the outbreak could be traced back to the introduction of swine from abroad. An instance which happened in Elk county is illustrative of this statement. It is said that Elk county had never experienced this disease, until in the autumn of 1884 a gentleman brought a car-load or more of young hogs from Illinois. Shortly after their arrival, cholera appeared among them and destroyed them all. By June 1, 1885, the disease had spread from the point of infection until more than \$12,000 worth of swine had been swept away.

LOSSES FROM THE DISEASE DURING 1885.

When a disease has become so widespread as this one now is, including, as it does, at least 58 of our most prominent swine-raising counties, it is not possible to get anything like accurate statistics of the losses experienced. As may be learned, however, from the figures given by counties at the end of this report, 32 counties have reported losses aggregating the sum of \$1,401,625. According to the assessors' reports, these 32 counties had on hand, March 1, 1885, 1,405,395 head of swine. The mortality in these counties during 1884 reached 137,904 head, or about 9.8 per cent. of those on hand March 1st, 1885. If we estimate the value of the swine lost this year at \$6 per head, we find that these 32 counties must have lost 233,604 head, or about 16.62 per cent. of those on hand on the first of March. The mortality for the whole State in 1884 was nearly the same as for the 32 counties referred to, or 9.62 per cent. of those on hand March 1st. If the mortality for the whole State has increased in the same proportion as found in the 32 counties above, the total losses will reach 408,068 head, worth at \$6 apiece \$2,448,408. The entire mortality of the year is not, of course, to be attributed to cholera; but the mortality from other causes does not much exceed 3 per cent., or 73,659 head, worth \$441,954, leaving the losses from cholera at \$2,006,454. But that this estimate upon our losses is too low, I think is shown by the following facts: The losses reported last year from the 32 counties previously referred to, only reached \$37,590 for this disease, while this year they are reported by the same officials as being more than

37 times as great. If the State as a whole has lost proportionately, then our losses will aggregate about \$4,000,000.

But however small the total losses may be determined to have been, they have exceeded by far any previous experience of the State in this regard. That the direct losses resulting from the mortality caused by this disease are not the only ones sustained, is to be learned only by a full consideration of the bearings which this industry has upon other interests. It must not be overlooked in this connection that an outbreak of cholera induces the marketing of swine of all ages, weights, and condition, which not only entails a loss upon the owner, but always depresses prices. The State of Kansas shipped to the Kansas City stock-yards alone, 1,816,478 head of swine during 1885, or nearly three-fourths of all we had on hand on March 1st. How many of this number were infected with cholera, no one knows. Fear of the disease always tends to reduce prices by largely limiting the sale of swine for stock purposes. The inability of the feeder of cattle to safely buy and keep swine to consume the waste in his feed lots, either prevents him from feeding at all or compels him to feed at a loss. As a consequence, the price of feeding-steers is also depressed. With neither hogs nor steers to eat his feed, the farmer is compelled to market his corn at low prices, much labor, and heavy expense.

These losses are a heavy drain upon the material resources of our State, and they ought not and cannot well be withstood. The question then arises, Can they be prevented? and if so, how?

HOW TO PREVENT AND SUPPRESS THE DISEASE.

To repeat what I have said in previous reports, there is no evidence to show that this disease is indigenous to Kansas, nor that any part of the State is permanently infected with the disease germ. I believe it is a fact that no outbreak has occurred in the State which cannot be traced directly or indirectly to the introduction of swine from other States, which were infected with cholera at the time of shipment, or which became so infected while in transit, either by means of the cars in which they were carried, or the stock-yards through which they passed. If all of our cholera then comes to us through our traffic with other States, it would seem that a proper supervision of this traffic might prevent the introduction of diseased swine to Kansas herds. That effective quarantine measures would accomplish this end, and that they are practical for adoption, I believe may be readily shown.

When our present law for the control of contagious animal diseases was being considered by the Legislature which passed the act, the question was raised as to whether hog cholera should be included in its provisions. As will be seen by a reference to sec. 22 of the statute, (ch. 2, Special Session Laws 1884,) "the provisions of this act shall not apply to sheep and hogs, except when affected or exposed to foot-and-mouth disease," and the reasons for excepting swine were advanced in the argument, that if the Sanitary Commission should quarantine an infected herd at the outbreak of cholera, the

owner would be prevented from marketing such animals as were not yet sick, and that as a consequence of this action his losses would be greater than if no interference was permitted by the State. While this argument is good enough, in so far as it goes, it fails to include that broader principle which underlies all true prosperity of communities—"the greatest good to the greatest number."

While it is true that the adoption of effective suppressive measures would entail heavier individual losses in the beginning of an outbreak, it is equally true that in this way only can greater aggregate losses be prevented, and proper measures of suppression be enforced; for so long as diseased animals are permitted to live in a community or exposed ones are shipped to market, just so long do we maintain dangerous foci from which the disease may spread.

The clinical history of this disease would indicate, that when once free from it we might keep it out of the State by quarantine measures which would neither be expensive nor oppressive.

The period of incubation being so short in summer as from four to seven days and in winter from seven to fifteen days, it would be sufficient to require that all swine coming into the State should undergo a quarantine of from seven to fifteen days, according to season, at the point of entry. In case the disease should appear during the period of quarantine, the whole herd should be immediately slaughtered, and the infected grounds thoroughly disinfected. This would of course entail a loss upon the owner, but it would be as nothing to the losses which result from the free introduction to the State of diseased or exposed animals.

Furthermore, such regulations would be full notice to all parties desiring to bring swine into the State of the penalties consequent upon an outbreak of the disease, which, in itself, would impel the owner to adopt all precautions against the possibility of infection.

The suppression of the disease within the State, at this time, would not prove so easy a matter to accomplish, owing to the vast extent of the territory infected. So desirable an end can be reached only with the assistance of the interested public. This interest might be secured by providing that on and after a certain date (say September 1st, 1886,) all swine found within the State affected with or which had been exposed to hog cholera would be destroyed without delay, and without compensation to the owner. This period of procrastination would enable all parties having infected herds to make such disposition of them as would entail the least loss.

The enforcement of such measures would cost but a small sum—probably not more than \$5,000 a year, or less than one-fourth of one per cent. of our losses for this year.

To enable the State to adopt such measures as I have suggested, requires only that section 22, chapter 2, Special Session Laws of 1884, shall be repealed.

If, however, it is believed that a special statute upon the subject would prove more satisfactory, I would respectfully submit the following draft of a bill covering the principal points hereinbefore set forth:

AN ACT for the protection of swine against the disease known as hog cholera.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. No person or persons shall bring or cause to be brought into or through any county or part thereof in this state, any swine which are diseased with, or which have been exposed to, what is commonly known as hog cholera. Any person violating any provision of this act shall upon conviction thereof be adjudged guilty of a misdemeanor, and shall for each offense be fined not less than one hundred and not more than two thousand dollars, or be imprisoned in the county jail not less than thirty days and not more than six months, or by both such fine and imprisonment.

SEC. 2. Whenever the governor of the state shall have good reason to believe that hog cholera has become epizoötic in certain localities in other states, territories, or countries, or that there are conditions which render swine coming from such infected districts liable to convey such disease, he shall by proclamation prohibit the importation of all swine into the state unless they are quarantined at the point of introduction, and retained there until they shall receive a certificate of health, signed by the state veterinarian of Kansas.

SEC. 3. Whenever the governor of the state shall have issued his proclamation as provided in section 2 of this act, it shall be the duty of the sanitary commission to establish upon the borders of the state such quarantine stations as may be required, and to prescribe such rules and regulations governing quarantine, as may be deemed necessary; and all animals detained in quarantine, as required by this act, shall be held at the expense of the owner or owners thereof; and upon the appearance of the disease known as hog cholera among the swine of any herd so held in quarantine, it shall be the duty of the sanitary commission to at once cause the destruction of all animals found so diseased, or which have been exposed to such disease, and the owner or owners of swine so destroyed shall have no claim upon the state or its authorized officers for the losses sustained thereby.

SEC. 4. On and after the first day of September, 1886, it shall be the duty of any person having in his possession any swine known or believed to be infected with hog cholera, or after having received notice that such swine are so infected, to at once report the same to the sanitary commission; and any person who shall keep any swine known, believed or reported to be so infected, or which have been exposed to such infection, where other swine not affected by or previously exposed to such disease may be exposed to its contagion or infection, or who shall sell, ship, drive, trade or give away any swine which are or have been so diseased or exposed, or who shall move or drive any swine in violation of any direction, rule, regulation or order establishing and regulating quarantine, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than one hundred nor more than five hundred dollars for each of such diseased or exposed swine which he shall permit to run at large, or keep, or sell, ship, drive, trade or give away in violation of the provisions of this act.

SEC. 5. On and after the first day of September, 1886, it shall be the duty of the sanitary commission to destroy, without delay, all swine found within the state which are affected with, or which have been exposed to, what is known as hog cholera, and to enforce such measures of disinfection and

quarantine as shall effectually prevent the spread of the disease; and no owner or owners of swine killed under the provisions of this act shall be entitled to compensation therefor.

GLANDERS AND FARCY.

Glanders and farcy are but two forms of one disease, and the term glanders should cover both. This disease is contagious, causes heavy losses to the State, and can and should be largely suppressed and prevented. The fact that glanders can be communicated to man, and is always fatal, makes it more to be dreaded than some of the other maladies. It is, in fact, one of the most malignant, insidious and loathsome of all the diseases known to medical literature. At least four human beings are reported to have died with it in the State during the year.

How many cases of the disease are covered by the reports which I have received, I am not able to state, for a majority of correspondents announce that they have several cases of glanders, or that glanders exists in the neighborhood; the remainder of the correspondents, however, have been more specific, and have reported 536 cases. These cases are distributed over 70 counties. The number of animals having died from the disease, as reported by the sheriffs of the various 27 counties heard from, is 218; as reported from 40 counties, by other parties, 421; 38 of the 70 infected counties reported that on December 1, 1885, they knew of 312 cases within the said counties.

The other duties of the office have prevented me from devoting any considerable time to the inspection of suspected cases of this disease. I have found, however, during the year, 51 cases of glanders or farcy, of which 16 were killed by their owners, 3 by order of your Board on consent of the owners, while 6 have been inspected since the last meeting of your Board, two of which the owner desires shall be killed by your order.

The inability of the State Veterinarian to inspect without delay, or even to inspect at all, the many cases of this disease reported, has given rise, very justly, as it seems to me, to many complaints at the unjust workings of the law, and at the same time has imposed very serious burdens on many innocent owners of suspected animals. As the law requires, most cases of glanders are reported to the sheriff of the county wherein they exist, and by him are placed in quarantine. Since a considerable number of the cases reported prove to be something other than glanders, it would seem that some means should be provided whereby an inspection of reported cases might be made without delay. To lock up, by authority of law, the only team a farmer owns, without giving him in return the early inspection services to which he is entitled, is not right. Furthermore, it is one of the greatest incentives in preventing the report of many cases of the disease.

In attempting to suppress this dangerous disease, several serious obstacles are encountered. The simple fact that it is so insidious in its nature, makes it one of the most difficult to deal with. The first obstacle met is the very uncertain period of incubation. How short this period may be is not posi-

tively known, although experimental inoculation shows it to range from three to twenty days. But where exposure takes place in the usual manner — by contact of the healthy with the diseased animal — the period of incubation has been observed to cover more than twelve months. As a rule, however, if no sign of the disease is discoverable, on expert examination, at the end of three months after exposure has happened, it may reasonably be expected that infection has not occurred. Another obstacle which presents itself is the very mild development of symptoms so often met with in this State, due no doubt to the dryness of our atmosphere. It is by no means exceptional to find an animal which has been infected with glanders for months, showing but a little discharge from the nostrils, and this only at intervals, with no enlargement of the submaxillary glands, and with all of the apparent symptoms of good health. Such cases prove to be the most dangerous, for the reason that they give no sign by which the public may be warned of their true condition, and as a consequence they mingle with our healthy animals with impunity. Finally, the majority of horse-owners seem to be impressed with the idea that they were born with a full knowledge of the horse and all of his ailments. It is useless to tell such individuals that a glandered animal often lives five or six years, maintaining during the time fair flesh, a sleek coat, and the ability to perform hard labor. It is equally useless to tell them that the farcy bud, the glanders nodule and the glanders ulcer, found in the mucous membrane of the nose, are specific indications of the disease about which no mistake can be made, for these things do not comport with their preconceived idea of what glanders ought to be, and consequently they do not believe that these evidences constitute sufficient grounds on which to base a diagnosis. That this statement is in no way exaggerated, will be seen from the following facts: On June 12th, 1884, I condemned two horses for glanders, in one of the central counties of this State. On the 16th of June your Board ordered the sheriff of the county to kill them. The day before this order was to be executed, the horses were stolen. As has been since learned, one of these animals was placed under treatment by a farrier in an adjoining county, and recovered (?) so that in January, 1885, he was sold to a farmer who owned twelve head of horses and colts, all of which, excepting one, were killed by this disease before the first day of October, 1885. The one still living is believed to be infected; the one causing all this loss has again been ordered killed, notwithstanding he was in good flesh, and showed no signs of the disease except a slight enlargement of one gland, an occasional discharge from the nose, and a few glanders nodules. And yet, in the face of all the evidence going to show this animal to be glandered, it is said by the local farrier, and believed by many, that he only has "bastard catarrh," if any one knows what that is.

But however diverse may be the opinions entertained by the laity, as to what constitutes glanders, the fact should be patent to all who give the

matter thought, that a disease which is incurable, and which is becoming more widespread and prevalent each year, causing not only the loss of many of our most valued animals, but human lives also, is one worthy of the intervention of the State in the matter of its suppression. At this time I beg to quote an editorial article (in part) from Prof. Liantard, editor of the *American Veterinary Review*, January number, 1886, p. 339: "Glanders we have, and plenty of it. It exists in nearly every city, county and State of the Union. Hydrophobia, if Pasteur's method is what we believe it to be, is now curable, and can be prevented. But what do we know of glanders, that kills the poor working-horse as well as the millionaire's trotter; that, though it progresses slowly and insidiously, nevertheless always kills; that disguises itself with all the appearances of perfect and robust health, while still infecting and killing wherever it can inoculate; and that is communicable to mankind, and always fatal, after a long and most loathsome sickness?"

..... Diseases of animals contagious to man must come under the cognizance of veterinary sanitary medicine. They belong to that domain, and sooner or later the duty [of suppression] will, upon the imperative demand of the people, impose itself upon our government."

Glanders does not originate spontaneously, hence it can be killed out and prevented. All civilized countries believe in the necessity for its extermination. All armies appreciate fully how soon it can destroy the efficiency of their cavalry and transport service. Even in our own army, all cases of glanders and farcy are destroyed as soon as discovered. The same measures should be enforced in this State.

That our general law on the subject of contagious diseases permits of the destruction of glandered animals is true, but that little can be accomplished in the way of exterminating the disease at present is due to the following circumstances: There are so many suspected cases reported that the State Veterinarian cannot inspect them all; there is no authority for the employment of assistants; the expense attending the destruction of a glandered animal, without the consent of the owner, often costs the State more than a healthy animal is worth; destroying glandered animals for the benefit of a community, without compensating the owner for at least a part of his losses, does not meet the approval of a majority of the people of most communities; a majority of the owners of glandered animals would rather trade them away, or sell them at any price, than permit of their destruction by the State, under the law as it now stands; many condemned animals are stolen (?) and taken to other counties, where they establish new centers of infection; and, lastly, there is an unrestricted traffic in animals affected with this disease, between this and other States.

These difficulties, I believe, could be overcome by the passage of an act containing provisions similar to those to be found in the bill which your Board recommended in your last report. I therefore would urgently request your Board to recommend such changes in the laws as were contemplated in the bill referred to.

TEXAS FEVER.

The protection afforded our State against this disease, by the law passed at the last session of the Legislature, and approved March 7, 1885, has been more complete than was anticipated by even the most zealous advocates of the measure.

That this law is eminently practical, may no doubt be claimed on the results effected by its operation during the year just closed. In so far as is known, not a single case of the disease has appeared within the State during 1885, except where exposure took place before the animals entered the State or while they were grazing in the Indian Territory. The losses sustained comprise the death of 126 animals, valued at \$3,410. I have inspected several herds of cattle passing through the State, which were reported to be dangerous, but in every instance they were shown to be healthy cattle, and from the territory excepted from the more stringent provisions of the quarantine law. That no cattle capable of transmitting this fever were driven into or through the State, except on the Colorado border, perhaps, I think may be presumed from the fact that the disease has not made its appearance in that portion of the State where through cattle were driven.

BLACK-LEG.

This disease does not appear to have been so prevalent during the year as in some other years. Of the few communications received regarding the malady, all have asked for preventive treatment, with one exception, in which an investigation was requested. Twenty-four counties reported the loss of 1,782 animals from this cause.

TUBERCULOSIS.

As our herds of thoroughbred cattle increase in number, lung consumption of cattle becomes more common, for but few cases are seen in native animals. I have seen quite a number of cases during the year, seven of which I destroyed, and held post-mortem examinations upon their carcasses. Since the disease may be transmitted from animal to animal, and to man, the question of preventing the use of the milk and flesh of animals so diseased is one in which the entire public is interested. For the purpose of disseminating information on the subject, I submit the following account of the disease:

CAUSES.

Tuberculosis is hereditary, and this constitutional taint is seen in several of the families of some of our most noted breeds. The female of the bovine species is more predisposed to the disease than the male. Animals with slender bodies, narrow chests and long legs seem most liable to develop the disease. Faulty hygienic conditions render the subjects more susceptible to infection, for the disease is most common in towns and cities where large numbers of animals are kept in dark, damp, filthy stables, with poor ventilation, little exercise, and food illly adapted to maintain vigorous health.

Cows kept for dairy purposes under these circumstances, and particularly the heaviest milkers in a herd, are the ones most likely to become affected. Young animals are more susceptible of infection than matured ones, and sooner succumb to the disease.

SYMPTOMS.

Tuberculosis generally runs a chronic course, with symptoms not well defined in the milder cases. In fact the disease is so insidious in its character that in the earlier stages it is often impossible to detect it at all, so that it may exist for months before being even suspected. The first signs noted are a loss of activity and energy, with general dullness and indifference. The sensibility of the skin is increased, particularly over the withers, back and loins, where, if pinched, the animal will shrink in an unusual manner. The sexual organs are also excited, causing the female to come in heat at frequent and irregular periods. These animals do not readily breed, and rarely carry their young to maturity, usually aborting during the early months of pregnancy. They will fatten, however, in this early stage of the disease, or give as much milk as if in perfect health; but the milk is poor in quality, thin, watery, and of a bluish tint. Very soon the mucous membrane of the bronchial tubes becomes irritable, and the animal coughs when going from a cold to a warm or from a warm to a cold atmosphere, and on pressure of the windpipe, or from unusual exertion. The space between the ribs is more tender from pressure than normal, while an examination of the lungs may show that certain parts are dull on percussion, and that the air does not enter the affected parts as in health, but with a harsh, rasping, or blowing sound. The parotid gland, found at the throat beneath the ear, often enlarges; the head is carried low and the nose extended, the heart-beat is increased in frequency, the breathing is more rapid than natural, and the patient at times shows a little fever.

As the disease progresses all these symptoms become more marked, the flesh disappears, the eyes become unusually bright and sunken, the nose is carried close to the ground, hurried exercise causes a free discharge of saliva and labored, gasping breathing, often with open mouth, the gait is weak, the appetite poor, the bowels are constipated or else affected with diarrhœa, the skin becomes harsh and dry, adhering to the ribs, while the fever increases, the milk supply rapidly disappears, rheumatic lamenesses come on, and the lung changes can easily be detected.

In the last stages all of these symptoms are aggravated to the highest degree, the body is reduced to a skeleton, breathing is short, rapid, and accompanied by a moan, the mouth is open, the tongue is protruded, the back arched, the cough frequent and painful, the extremities are cold, a foetid diarrhœa sets in, and the patient dies.

MORTALITY.

All cases of this disease cause death unless the patient is destroyed for other reasons. In many cases the disease may run a course of a year or

more under good hygienic surroundings. Occasionally a case seems to recover for a time, but the improvement is not of long duration, for slight causes bring on a renewed attack, which rapidly proves fatal.

TREATMENT.

All measures which will tend to prevent the development of the disease should of course be adopted. The first and most important of these is to guard against breeding from animals that are infected or that came of infected parents. Too close inbreeding certainly predisposes to this disease by impairing the functional powers of the progeny, and is sure to transmit the taint with disastrous consequences if once developed in the family. Of course proper food, water, exercise and stabling are important adjuncts by no means to be overlooked.

Since the disease is transmitted by cohabitation, no animal even suspected of having become infected should be permitted to come in contact with the healthy. Neither the milk nor flesh of affected animals should be used for food. Whenever the disease can be made out beyond question, the patient should at once be destroyed and burned or buried, and all the necessary measures for effective disinfection adopted.

THE LUNG-WORM.

In certain portions of the State, the lung-worm has caused considerable trouble among the calves, sheep and pigs. A short history of this parasite is given in connection with the report on hog cholera.

The symptoms caused by the presence of this worm in the lungs are very generally known, but how to get rid of them is not so well understood. The fact that pastures become infected with, and are hard to rid of these worms, makes the treatment of the disease more difficult than it would otherwise prove. In fact, no treatment of the affected animal will prove of lasting benefit while he is kept on infected pastures. Where new and uninfected pastures can be used, the following treatment may be adopted: Place the affected animals in a small, close shed or stable, and compel them to inhale sulphurous acid gas, made by dropping pinch by pinch of sulphur on some hot coals or burning paper. The shed should be well filled with the gas for a period of from fifteen to thirty minutes. The person burning the sulphur should remain in the shed during the treatment, so that no harm may result from the evolution of an excessive quantity of the gas. When animals being treated cough freely, or fall to the ground, fresh air should be admitted. This treatment should be repeated once a week until coughing among the herd ceases. Usually two or three doses of the gas prove sufficient. If any of the sick have become thin, weak and poor, they should receive small doses of some of the milder tonics, such as gentian, ginger, and iron. Where it can be administered readily, small doses of turpentine may be given in gruel every day or two until the worms disappear. Infected pastures should not be used for a period of six months after the removal of diseased animals therefrom.

TAPE WORMS IN SHEEP.

In a few of the sheep-grazing districts of the State, tape worm has become so common that young sheep are carried through the winter with great difficulty. During the early months of the year just ended, several hundred deaths from this cause were reported. When pastures and pools of water become infected with this parasite, (*Tænia expansa*) the profits of sheep raising are largely destroyed. The presence of the disease may be determined by a close examination of the stools of young sheep affected with diarrhoea, in which sections of the worms may be found, or by an examination made upon the body of the dead. These worms vary in length from an inch or two to several feet, according to age.

Treatment consists in the administration of small doses of turpentine in gruel, tonics of gentian, ginger and iron, and good food with warm shelter. Infected pastures should be abandoned for a time.

SUMMARY OF REPORT.

Counties.	Communications from, on glanders.....	Deaths of glanders, reported.....	Deaths from glanders, reported by sheriff's.....	Cases of glanders on hand, Dec. 31, 1855,.....	Deaths from glanders, reported by others.....	Losses from hog cholera.....	Losses from Texas fever, number of leg, number of...
Allen.....	5	10*		8		\$2,000	
Anderson.....	17	18*	6	10		5,000	40
Atchison.....	7	6*					
Barber.....	2		1	1	1		100
Barton.....	12	14*	1	7	7	1,000	10
Bourbon.....	9	3	1		5	33,000	
Brown.....	7	3*	4		1	250,000	80
Butler.....	7	9*				35,000	
Chase.....	4	6*	3	3	2	3,000	100
Chautauqua.....	3	4					
Cherokee.....	4	14	1		1	2,000	10
Clay.....	2	1				13,000	
Cloud.....	5	1*				2,500	
Coffey.....	8	2					
Cowley.....	9	21*		7	5		
Crawford.....	6	11*	1	3		2,000	8
Davis.....	4	3*	1				
Decatur.....	8	6*		8	3		3
Dickinson.....	7	7*					
Doniphan.....	4	3*				250,000	
Douglas.....	7	4*		4	4	25,000	3
Edwards.....	9	3*		1			
Elk.....	8	17*		4			
Ellis.....	1				1		100
Ellsworth.....	3	12*	5	9	9		19
Finney.....	2	3	3				
Franklin.....	19	4*		4	9	25,000	
Graham.....	3	1		1			
Greenwood.....	4	2		1			
Hamilton.....	1	2			2		
Harper.....	5	4*			5		
Harvey.....	6	4*		1	1		
Hodgenian.....	2	1					
Jackson.....	6	6*	1	2	4	50,000	5
Jefferson.....	1	1					
Jewell.....	3	8*	1	8	20	1,000	11
Johnson.....	5	5*		3			
Kingman.....	3	4*		14	5	200	40
Labette.....	8	9		6	5		
Leavenworth.....	1						
Lincoln.....	4	4*					
Lyon.....	8	5*		3	2		
Marion.....	12	5*	16	12	11	15,000	50
Marshall.....	14	22	30	17	10	100,000	500

SUMMARY OF REPORT—CONCLUDED.

Counties.	Losses from Texas fever, number of,					
	Losses from black-leg, number of..	Losses from hog cholera.....	Cases on hand, December 31, 1885.....	Deaths from glanders, reported by others.....	Deaths from glanders, reported by sheriffs.....	Communications from, on glanders.....
McPherson.....	14	11*	4	5		
Miami.....	4	6*				
Mitchell.....	2		10		15	\$35,000
Montgomery.....	13	17*	9	27	10	5,000
Morris.....	5	6	3	2	2	
Nemaha.....	5	4*	1			100,000
Neosho.....	3	2				50
Ness.....	8	5	7	8	3	
Norton.....	1	1				
Osage.....	8	11*		4	6	4,000
Osborne.....	5	8*				
Ottawa.....	5	6*	1		4	
Pawnee.....	5	6*	1	1	6	
Phillips.....	6	10*	10	1	1	
Pottawatomie.....	3	6*		1		200
Pratt.....	4	6*	4		4	
Reno.....	7	7*	35	7		60,000
Republic.....	5	7*				20,000
Rice.....	11	11*	3	2	5	125
Riley.....	3	3*				
Rush.....	6	5	5	2		
Saline.....	3	2*		12	14	120,000
Sedgwick.....	16	26	40	180	50	280,000
Shawnee.....	8	7				5,000
Smith.....	6	22*		7		
Stafford.....	5	6*			3	
Sumner.....	7	37*		20	8	50,000
Trego.....	1	1				
Wabaunsee.....	1	2				5,000
Washington.....	8	16*	10	2	50	1,800
Wilson.....	9	12*		5		
Woodson.....	3	4		2		
Wyandotte.....						7*
Total.....	454	536	218	421	312	\$1,500,626
						1,793
						126

* In many reports no specific number of cases was named, hence this column does not show all the cases reported.

A. A. HOLCOMBE,

State Veterinary Surgeon.

TOPEKA, KANSAS, December 31, 1885.

THIRD ANNUAL REPORT

OF THE

LIVE-STOCK SANITARY COMMISSION,

AND

STATE VETERINARIAN

OF THE

STATE OF KANSAS.

PUBLISHED BY THE STATE BOARD OF AGRICULTURE.

TOPEKA:

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MEMBERS OF THE BOARD.

HARRISON KELLEY, CHAIRMAN,	Ottumwa.
J. W. HAMILTON,	Wellington.
J. T. WHITE,	Ada.

A. A. HOLCOMBE, *State Veterinarian and Secretary, Topeka.*

D. of D.
JAN 3 1918

REPORT.

HON. JOHN A. MARTIN, *Governor of the State of Kansas:*

SIR—In accordance with the provision contained in section 1 of the act of the Legislature of Kansas, approved March 24, 1884, for the protection of domestic animals, we have the honor to submit herewith our third annual report.

The duties devolving upon our Board have necessitated the holding of seventeen meetings during the year—one at Sedan, one at Marion, one at Holton, one at Cottonwood Falls, three at Kansas City, two at Great Bend, and the remainder at Topeka.

PROCEEDINGS OF THE BOARD.

TWENTY-FIFTH MEETING OF THE BOARD.

TOPEKA, KAS., Jan. 30, 1886.

The twenty-fifth meeting of the Board was held in the office of the State Veterinarian, Topeka, Kas., Jan. 30, 1886.

Board convened at 11 A. M. Present: Messrs. Kelley, Hamilton, and the Secretary. Absent: J. T. White.

The minutes of the previous meeting were read and approved.

The State Veterinarian reported two cases of glanders belonging to A. J. Alexander, Larned; one case of glanders belonging to C. J. Vorckler, Larned; and two cases of glanders owned by D. S. Wisehart, of Hamilton county, with recommendation that they be killed as required by law.

The Secretary reported that Mr. Wisehart had waived his right to a hearing of his case, and desired the Board to have the horses in question killed. On motion of Mr. Hamilton, the Secretary was directed to issue the order of the Board to the Sheriff of Finney county, commanding him to kill and bury the animals reported by the State Veterinarian as glandered, and owned by D. S. Wisehart, in the county of Hamilton, State of Kansas.

Communications from Messrs. Alexander, Vorckler, Cline, Foe and DeMoss, all of Larned, were read, in which requests were made that a hearing by the Board should be granted Messrs. Alexander and Vorckler before their horses were ordered killed.

On motion of the Chairman, the Secretary was directed to inform D. E. Benedict, Great Bend, that the Board would reinspect such of his animals as were still in quarantine, at 9 A. M. on Feb. 5th, 1886; and to give notice of hearing to C. A. Alexander and C. J. Vorckler, of Larned, that their cases would be called at 1 P. M. of the same date.

The accounts of E. R. Allen, Inspector at Kansas City, in the sums of \$1.90, incidental expenses for the month of December, 1885, and \$1.80, incidental expenses for

January, 1886, were approved, and ordered paid from moneys in the hands of the Secretary.

The accounts of D. E. Benedict, Great Bend, in the sums of \$40 for salary in caring for quarantined animals during the month ending December 13th, 1885, and month ending January 13th, 1886, were approved, and referred to the Attorney General, recommending approval.

On motion of Mr. Hamilton, the Board adjourned to meet at Great Bend on Feb. 5th, at 9 A. M.

Approved: Feb. 9, 1886.

HARRISON KELLEY, *Chairman.*

A. A. HOLCOMBE, *Secretary.*

TWENTY-SIXTH MEETING.

GREAT BEND, KAS., February 9, 1886.

The twenty-sixth meeting of the Board was held at the Typer House, Great Bend, Kas., at 8 A. M., on February 9, 1886. Members present: Messrs. Kelley, White, and the Secretary. Absent: J. W. Hamilton. The reading of the minutes of the previous meeting were laid over for the session to be held in Larned. The Secretary reported that the date of meetings at Great Bend and Larned had been changed, at the request of the Chairman, from February 5, to February 9, and that all interested parties had been given due notice. Mr. Benedict being present, the Board took a recess for the purpose of inspecting his quarantined horses, after which they proceeded to Larned.

LARNED, KAS., February 9, 1886.

The Board, after inspecting the animals reported by the State Veterinarian as being glandered, met in special session at the Larned House, at 2 P. M. Members present: Messrs. Kelley, Hamilton, White, and the Secretary.

The minutes of the previous meeting were read and approved. Hearing of the case of C. A. Alexander was now called, and the Secretary read the report and affidavit of the State Veterinarian, citing that one bay mare and one bay gelding, both the property of C. A. Alexander, were glandered, and recommending that they be killed.

C. A. ALEXANDER, being first sworn, testified that: I had purchased the horses in question some time before they were condemned. They were then recovering from an attack of distemper. Told the parties from whom I made the purchase not to deliver them until they were well. I believe the State Veterinarian is mistaken when he says they are glandered. I believe science is often mistaken. I do not want the horses killed, but want them kept until I am satisfied that they are glandered as charged, or until they are entirely well. I think the State should bear the expense of keeping them until I am satisfied. If it will not do so I will bear the expense myself. I will keep them under such reasonable quarantine regulations as the Board may impose. I will never believe they are glandered if they are killed now.

JOHN MORRIS, being first sworn, said: The State Veterinarian condemned two horses for me in Stafford county, in 1884, as being glandered. One of the condemned horses has since died, but the other, in my opinion, is well. Think the State Veterinarian was mistaken when he said those horses were glandered. I think so for the reason that he did not condemn other horses in the neighborhood, from which I think mine were infected with some disease. Have not seen the horses for some time. Do not know what glanders is. Never saw a case. The horse that died may have had the glanders, but I think he died of old age. The other horse may have the glanders, but I don't think he has.

DR. RHEA said: I know nothing of the Morris horses, except from report. I have

heard that one died. Do not know the cause of death. He may have died of glanders. I was present when the State Veterinarian examined the horses, in August, 1884. I supposed then that they were glandered. Have never examined them since. I do not know what the glanders is. The Morris horse still living may be glandered.

DR. GREGG, being first sworn, said: The horses owned by Colonel Alexander and Mr. Vorckler, which have been condemned by the State Veterinarian, are not glandered—they have catarrh only. They are curable. I am a graduate in veterinary medicine; graduated from Cornell University in 1886; have lost my diploma; think it was burned up; don't know anyone who graduated in the same class.

DR. BLAKE, being first sworn, said: I am a veterinary surgeon; am not a graduate; have been in practice many years; think the horses condemned by the State Veterinarian are not affected with glanders. I have seen the horses owned by D. E. Benedict, at Great Bend, which the State Veterinarian pronounced glandered. I said they were not glandered. If a horse showed well-defined nodules or ulcers on the mucous membrane of the nostrils, I would say he had the glanders. Have not been able to detect such lesions in Mr. Alexander's horses.

The State Veterinarian, A. A. HOLCOMBE, being sworn, said: Colonel Alexander's horses are glandered. The disease is in the mild and chronic form. It may require months or even years to develop sufficiently to satisfy all parties who take an interest in the matter. I believe these horses might be kept with safety in close quarantine until the owner is satisfied that they are glandered, as charged; believe Colonel Alexander's wishes in the matter should receive due consideration, and that these horses should be kept until the disease is fully developed. To destroy them, in the face of so much opposition, would seem to the public like an effort to cover an error of diagnosis by wiping out the evidence. The public should know that the only object sought in enforcing the sanitary laws of the State is the protection of all and the injury of none.

On motion of Mr. Hamilton, the hearing in the case was closed.

The case of C. J. Vorckler was next called. The Secretary read the report and affidavit of the State Veterinarian, citing that one brown gelding, twenty years old, the property of C. J. Vorckler, was diseased with glanders, and recommending the same be killed according to law.

Mr. Vorckler being present, said he had no defense to make, except that he did not want his horse killed unless he was paid for him.

The case being closed, Mr. Hamilton moved that the order of the Board be issued to the Sheriff of Pawnee county, commanding him to kill and bury one brown gelding, 20 years old, marked with a cross (+) on the right hip, the said horse being glandered and the property of C. J. Vorckler, of Larned, Kas. The motion was carried, all members of the Board voting aye. It was moved by Mr. Hamilton and carried, all members voting aye, that C. A. Alexander be permitted to hold his horses at his own risk and expense, in close quarantine under the supervision of the Sheriff of Pawnee county, outside of the corporate limits of the city of Larned, until further orders from the Board.

D. E. Benedict having acknowledged to the Board that his quarantined horses were infected with glanders, and having consented to the killing of said horses, Mr. White moved that the order of the Board issue to the Sheriff of Barton county, commanding him to kill and bury without delay one bay filly, two years old; one sorrel stallion and one gray gelding, all marked with a cross (+) on the right hip, and all the property of D. E. Benedict, Great Bend, Kas. The motion carried, all members of the Board voting aye.

On motion of Mr. White, the Board adjourned.

Approved: March 31, 1886.

HARRISON KELLEY, Chairman.

A. A. HOLCOMBE, Secretary.

TWENTY-SEVENTH MEETING.

TOPEKA, KANSAS, March 31, 1886.

The twenty-seventh meeting of the Board was held in the office of the State Veterinarian, Topeka, Kas., on March 31, 1886. Board convened at 10 A.M. Members present: Messrs. Kelley, Hamilton, White, and the Secretary.

The minutes of the previous meeting were read and approved.

The secretary reported that on February 19, 1886, he had issued an order to the Sheriff of Ford county, commanding him to kill and bury one glandered horse, owned by W. L. Charrington, of Dodge City; also an order to the Sheriff of Atchison county, commanding him to kill two horses and one mule, owned by O. F. Bostwick, of Atchison; and an order to the Sheriff of Lyon county, commanding him to kill one brown mare, the property of Dr. W. P. Parr, of Emporia. All these animals were glandered, and the owners had consented to their killing.

On motion of Mr. Hamilton, the action of the Secretary in issuing the above orders in the name of the Board, was approved, and the orders confirmed.

On motion of Mr. White, the Secretary was instructed to keep a record of the estimated value of all animals ordered killed for glanders, the estimate to be based on the working value of the animal at the time of condemnation.

Communications from the Governor were read, transmitting letters from the Governors of Kentucky and Tennessee, in which requests were made that the Kansas quarantine against cattle from those two States, on account of contagious pleuro-pneumonia of cattle, should be raised, inasmuch as the disease had been eradicated.

On motion of Mr. Hamilton, the Secretary was directed to recommend to the Governor, on the part of the Board, that the quarantine against the States of Kentucky and Tennessee be raised.

The following accounts were allowed, and transmitted to the Attorney General, with request that they be approved:

D. D. Dougherty, Sheriff Bourbon county, killing glandered horses.....	\$15 45
G. W. Johnson, Ottawa county, " " horse.....	5 00
J. H. Ritchie, Montgomery county, " " horses.....	10 00
H. T. Hooper, " " " " "	15 00
F. E. Coolidge, " " " " "	15 00
Isaac Bast, " " " " " horse.....	5 00
J. T. Hukill, " " killing and burying three glandered horses.....	15 00
D. E. Benedict, Barton county, caring for quarantined horses for month ending Feb. 13, 1886....	40 00

E. R. Allen, inspector at Kansas City, incidental expenses for February, seventy cents; for March, fifty cents were allowed and ordered paid from funds in the hands of the Secretary.

Account of W. L. Charrington, Ford county, for value of glandered horse killed, \$100, was ordered returned, with the information that the law granted no compensation in such cases.

Account of Charles Van Pelt, Marion, in the sum of \$15 for livery, was returned, with the information that the account should have been rendered by the Sheriff of Marion county during the fiscal year ending June 30, 1885.

The State Veterinarian reported two cases of glanders on the premises of Jerome Kunkel, in Jefferson county; one owned by T. F. Lamar, Jackson county, and one owned by S. Brown, Pawnee county. Also, that in company with Mr. Hamilton, he had condemned and killed, with consent of the owners, fourteen glandered animals in Montgomery county; and had condemned one other, which would be killed by the Sheriff of that county.

The Secretary having reported that the calls for the services of the State Veterinarian to inspect animals supposed to be glandered were more numerous than could

be answered, it was moved by Mr. White, and carried, that Mr. Hamilton and the Secretary prepare a list of the various counties in the State, showing the order in which the said counties would be inspected for glanders, and to print the same for distribution.

On motion of Mr. Hamilton, the Board resolved that hereafter, whenever possible, one member of the Sanitary Commission shall accompany the State Veterinarian when inspecting animals reported to be glandered, in that they may be disposed of without delay.

On motion of Mr. White, the Board adjourned.

Approved: May 15, 1886.

A. A. HOLCOMBE, *Secretary.*

J. W. HAMILTON, *Chairman pro tem.*

TWENTY-EIGHTH MEETING.

COTTONWOOD FALLS, KAS., May 14, 1886.

The twenty-eighth meeting of the Board was held at Cottonwood Falls, Kansas, in the office of the Sheriff of Chase county, on May 14, 1886. Board convened at 8 A. M. Members present: Messrs. Hamilton, White, and the Secretary.

On motion of Mr. White, Mr. Hamilton acted as temporary chairman.

The reading of the minutes of the previous meeting was postponed to another hour.

The Secretary reported that the meeting of the Board had been called by the Governor, who had received information that four hundred head of Texas cattle had been driven into Chase county in violation of the provisions of chapter 191, Laws of 1885, and that his Excellency had expressed the desire that the Board should take such action as would fully protect the citizens of Chase county, if, in their opinion, these cattle were capable of transmitting Texas fever.

Mr. White reported that he had, on the 13th inst., inspected the cattle in question, and their surroundings; that in his opinion they were Arkansas or Indian Territory cattle, and of the kind noted for transmitting Texas fever; that they were in an inclosed pasture in a neighborhood where several hundred fat steers were being prepared for the market, and that if they were from the southern part of the Indian Territory, as charged, they should be held in the closest quarantine until the first of December, as the law provides.

J. W. Griffis, Sheriff of Chase county, reported that he had, on direction of the Governor, taken charge of the said cattle on the 11th inst., to await such further action as the Sanitary Commission might take; that they were under such quarantine regulations as would prevent other cattle from coming in contact with them, and that Mr. S. F. Jones was present as the agent of the owner, W. R. Terwilliger, of Council Grove, to represent his interests in the matter.

Mr. Jones said that the owner of the cattle in question had inadvertently violated the law governing the admission of Southern cattle to the State, and that they would not attempt to conceal any of the facts relating thereto; that 300 head of the cattle were bought in the neighborhood of Caddo, Indian Territory, and shipped from there to Council Grove, Kas., where they arrived on or about May 1st, 1881. The remainder, about one hundred head, came from the same place, but were wintered at Council Grove; that on or about the 10th of May they came to Chase county, having been driven over the public highway from Morris county; and that while they had no desire to shirk any of the responsibilities imposed by the situation, the interested parties desired that the expense of the quarantine regulations should be made as light as possible.

On motion of Mr. White, the Board took a recess, to meet in Topeka at 10 a. m. on the 15th inst.

TOPEKA, KAS., May 15, 1886.

Pursuant to the conditions of adjournment, the Board met at 10 a. m. May 15th, 1886, in the office of the State Veterinarian, Topeka, Kas.

Members present: Messrs. Hamilton, White, and the Secretary.

The minutes of the previous meeting were read and approved.

On motion of Mr. White, the following order was issued to the Sheriff of Chase county, to wit:

Whereas, On the 10th day of May, 1886, due and proper complaint having been made to him by citizens of the State, and by the Governor of the State of Kansas, that the hereinafter-described herd of cattle, within the county of Chase, State of Kansas, were believed to be capable of communicating and of imparting the disease known as Texas, splenic, or Spanish fever, J. W. Griffis, Sheriff of Chase county, Kansas, did take charge of and restrain in said county, under temporary quarantine regulations, a certain herd of cattle in said county, described as follows: Three hundred and ninety-six head of one, two, and three-year-old cattle, known as Cherokee, Indian, and Arkansas cattle; and

Whereas, Said J. W. Griffis, Sheriff as aforesaid, did make immediate report of his said action in the premises to the Live-Stock Sanitary Commission of the State of Kansas; and

Whereas, The said Live-Stock Sanitary Commission, after due and full investigation of the matter, do find that said herd of cattle was shipped from Caddo, Choctaw Nation, Indian Territory, to Council Grove, Morris county, Kansas, by W. R. Terwilliger, between the first day of March, 1886, and the first day of December, 1886, to wit, on or about the first day of May, 1886; that the said cattle arrived at Council Grove, Morris county, Kansas, from said Caddo, Indian Territory, on the first day of May, 1886, and were driven from Council Grove, Morris county, Kansas, to said Chase county, Kansas, on or about the sixth day of May, 1886; that said Caddo, Indian Territory, is a place south of the thirty-seventh parallel of north latitude, and south of the thirty-sixth parallel of north latitude, and east of the twenty-first meridian of longitude west from Washington, and south of the thirty-fourth parallel of north latitude; and that said cattle have not been kept, since the first day of December, 1885, west of the east line of the Indian Territory and north of the thirty-sixth parallel of north latitude, nor west of the twenty-first meridian of longitude west from Washington and north of the thirty-fourth parallel of north latitude; and

Whereas, The Live-Stock Sanitary Commission of the State of Kansas do further find that said cattle are capable of communicating and are liable to impart Texas, splenic, or Spanish fever, and that the same were driven into this State in violation of the provisions of chapter 191, Laws of 1885:

Now, therefore, By virtue of the premises aforesaid, and pursuant to the provisions of section 3, chapter 191, Laws of 1885, we, the Live-Stock Sanitary Commission of the State of Kansas, do hereby direct and order the Sheriff of Chase county, Kansas, to take, hold, and care for in close quarantine—on the premises described as follows: the south half of section 25, town 22, range 7 east, all of section 36, town 22, range 7 east, and the north half of section 1, town 23, range 7 east—all of the 396 head of cattle hereinbefore described, until released by order of this Board. Close quarantine shall consist in keeping the said cattle at least four rods within the boundary fence of the above-described premises during the day, and in a close corral, to be erected at or near the center of said premises, during the night. Quarantine notices, printed on muslin, shall be posted at each and every corner of said premises, on all gates or other entrances, and on the public highway leading through said premises at a distance of forty rods outside of the boundary fence.

For the purpose of ready identification, the above-described cattle shall be branded on the hip with the letter "T."

By order of the Live-Stock Sanitary Commission, State of Kansas.

TOPEKA, KAS., May 15th, 1886.

A. A. HOLCOMBE, *Secretary*,

To J. W. Griffis, Sheriff of Chase county, Cottonwood Falls, Kansas.

On motion of Mr. White, the Board adjourned to meet in Kansas City on May 19, 1886.

A. A. HOLCOMBE, *Secretary*.

Approved: May 19, 1886.

J. W. HAMILTON, *Chairman pro tem.*

TWENTY-NINTH MEETING.

KANSAS CITY, KAS., May 19, 1886.

The twenty-ninth meeting of the Board was held in the office of the State Inspector, Kansas City, Kas., May 19, 1886. Board convened at 11 a. m. Members present: Messrs. Hamilton, White, and the Secretary. Absent: Harrison Kelley.

Minutes of the previous meeting were read and approved.

The Secretary presented a letter from J. W. Griffis, requesting, upon the part of the individuals who held mortgages thereon, that 96 head of the Terwilliger cattle, now held in quarantine by the Board in Chase county, be not branded as directed in the order of the Board dated May 15, 1886, for the reason that the said 96 head of cattle were wintered in Kansas.

It was moved by Mr. White, and carried, that no modification of the order to brand the cattle in question be now made, but that upon proper showing by the owner that 96 head of the said cattle were held during the past winter in Morris county, and their identification being satisfactorily established, the modification of the order asked for will be made.

The following accounts were allowed, and referred to the Attorney General of State, with request that they be approved:

Amasa Atkinson, Barton county, killing and burying glandered horse.....	\$ 5 00
J. S. Dalziel, Sheriff Barton county, killing and burying glandered horses.....	16 00
Fred. Singer, Ford county, killing and burying glandered horse.....	5 00
F. E. Shaw, Sheriff Atchison county, killing and burying glandered horses.....	16 00
J. G. Denman, Pawnee county, killing and burying glandered horses.....	15 00
John Lutz, Jackson county, killing and burying glandered horses.....	10 00
Frank Gage, Montgomery county, killing and burying glandered horse.....	5 00
H. F. Titus, Montgomery county, killing and burying glandered horse.....	5 00
John Kimmell, Crawford county, killing and burying glandered horse.....	5 00
Ernest Foi, Pawnee county, caring for animals in quarantine.....	25 00

The following accounts were returned, with the information that, inasmuch as the services were not rendered by order of the Board, the State was not liable:

S. Thompson, Sheriff Brown county.....	\$ 5 50
N. B. Lohmuller, Sheriff Nemaha county.....	5 00
J. S. Dalziel, Sheriff Barton county.....	67 50
J. T. Godfrey, Sheriff Rice county.....	26 85
J. W. Griffis, Sheriff Chase county.....	51 00
C. A. Green, Sheriff Clay county.....	25 00
E. Henderson, Sheriff Sumner county.....	4 00
Conway Marshall, Sheriff Anderson county.....	13 75

The account of J. L. Smith, Sheriff of Reno county, was returned, with request that the same be amended and itemized as required by law.

On motion of Mr. White, the Secretary was instructed to issue a notice of hearing to T. F. Lamar, Jackson county, with information that the Board would convene at the Sheriff's office, in the city of Holton, on June 2, 1886, at two o'clock p. m., for the purpose of determining whether a gray stallion owned by the said Lamar is glandered as charged in the report and affidavit of the State Veterinarian dated March 31, 1886.

On motion of Mr. White, the Board adjourned.

Approved: June 19, 1886.

A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

THIRTIETH MEETING.

HOLTON, KAS., June 2, 1886.

The thirtieth meeting of the Board was held in the Sheriff's office, Holton, Kansas, on June 2, 1886. Members present: Messrs. Hamilton, White, and the Secretary. Board convened at 11 a. m.

On motion of Mr. Hamilton, Mr. White was made chairman *pro tem.*

The reading of the minutes of the preceding meeting was postponed. The Secretary read the report and affidavit of the State Veterinarian regarding the stallion owned by T. F. Lamar. Mr. Lamar said he had no evidence to present showing that

his horse was not glandered as charged, except that, in so far as he knew, no animal had ever contracted the disease from the condemned horse. Had killed a mule that was about to die with the glanders some time ago. Didn't know whether the mule took the disease from the horse or not. The horse had been discharging from the nose for a long time. Had always been able to do hard work. Had covered a number of mares last season, among others three for the Lutz brothers which had been condemned as glandered. Don't believe the horse has the glanders. Don't want to have him killed. Want to keep him until satisfied he has glanders or until he is entirely well.

On motion of Mr. Hamilton, the Board took a recess to inspect the horse.

After the inspection, it was moved by Mr. Hamilton, and carried, that the order of the Board issue to the Sheriff of Jackson county, commanding him to kill and bury the horse in question, inasmuch as he was affected with glanders.

On motion of Mr. Hamilton, the Board took a recess, to meet at Girard on the 3d inst.

GIRARD, KAS., June 3, 1886.

The Board convened on the premises of Charles Jones, Crawford county, at 5 p. m. Members present: Messrs. Hamilton, White, and the Secretary. The State Veterinarian reported a case of glanders owned by Mr. Jones. No objection being offered by the owner, the animal was shot and buried.

On motion of Mr. Hamilton, the Board took a recess, to meet at Beulah, on the 4th inst.

BEULAH, KAS., June 4, 1886.

The Board met at 9 a. m., on the premises of George Kelly. The Secretary read the report and affidavit of the State Veterinarian, charging that a brown mare, the property of Mr. Kelly, was glandered. The Board having inspected the animal and pronounced her glandered, the owner withdrew his objections, and she was killed and buried.

On motion of Mr. Hamilton the Board adjourned.

Approved: June 19, 1886.

A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

THIRTY-FIRST MEETING.

MARION, KAS., June 18, 1886.

The thirty-first meeting of the Board was held in the City Hotel, Marion, Kas., on June 18, 1886.

The Board convened at 10:45. Members present: Messrs. Kelly, White, and the Secretary. Absent: J. W. Hamilton.

Reading of the minutes of the preceding meetings was postponed to another hour.

The State Veterinarian reported that on June 7th he had received a letter from the Governor, directing that the animals on the premises of Joseph Fike, in Marion county, be inspected without delay, inasmuch as it had been reported on good authority that some of said animals were glandered; that in compliance with that request, the animals in question had been inspected, five of which were found glandered.

The Secretary said he had issued notices of hearing to the owners of the condemned horses, Messrs. Fike, McCray, and Dougherty, and that the date of said hearing was set for June 18, 1886, and the place the City Hotel, in the city of Marion.

The report of the State Veterinarian was then read, citing that one bay gelding,

one gray gelding, and one gray mare, all the property of Jos. Fike, were glandered, and recommending that they be killed, according to law.

Mr. FIKE, being first sworn, said: I believe the bay gelding and the gray gelding are not now affected with glanders as charged by the State Veterinarian. The gray at one time belonged to Jacob Smith, of Lincolnville. He was brought to my place one night nearly two years ago. He had a cross on his hip, and I was told he had been condemned by the State Veterinarian as glandered. I put him under treatment and cured him — all but the scars in the nose. The bay horse came from Mr. King, at Marion. He was placed under my treatment, and is now cured. The scars in the nose do not amount to anything — they are only the signs remaining showing that the animal has had the disease. Can cure most cases of glanders if I have them in time. The Smith horse had the glanders, but is now cured. Can't cure all cases. Some cases are what I call fatal. Can't cure them. I have killed and buried the gray mare owned by me, and the bay gelding owned by Dougherty. My gray mare took the disease from being inoculated. I inoculated her last November with matter from the nose of a horse owned by Mr. King. I couldn't cure her, because she had the fatal form of glanders. The horse I inoculated her from, came from Johnson, in Morris county. He was brought to my place one night about two years ago. He had a cross on his hip. I was told he had been condemned for glanders by the State Veterinarian. Don't know who brought him to my place. Am told the State Veterinarian inoculated him last November. Think that gave him the glanders. Didn't know he had been inoculated when I experimented on my mare. Dr. Holcombe is responsible for my mare's death. I inoculated her to show that the State Veterinarian was mistaken, and that the King horse did not have the glanders. King lost ten or eleven horses during 1885. Don't know whether they had glanders or not. The symptoms looked like glanders. I cured the Morris county horse before he went to King's. He was not contagious while under my treatment. Gleet runs into glanders. Can't tell exactly when the change takes place — may be gleet this week and glanders next. Gleet is contagious, and can't always be cured. No glandered horse should be killed except the fatal cases. I tell the fatal cases by putting them under experiment. If they don't get better by the time the experiment runs out, they are fatal. Am not a graduate in medicine, but have practiced 28 years. I doctor people sometimes. Have had the glanders myself. Cured it with my treatment for the disease.

J. H. Nienstedt, B. A. Pumpelly, M. F. Shupe, Jacob Book, E. E. Mastin, J. B. Shields, D. B. McNicol, A. L. Waterman, Daniel Merilatt, and J. T. Mowers were called as witnesses by Mr. Fike. They all testified in substance, that they were neighbors of Mr. Fike, and believed that he could cure the glanders. That they were opposed to having his horses killed, and were willing to take the chance of having their horses infected from horses which Mr. Fike should say were not dangerous.

At the request of Mr. Fike, A. A. HOLCOMBE was sworn, and said: I condemned two horses in Morris county, in June, 1884, as glandered. They were ordered killed. The Sheriff of Morris county reported in July of that year that the condemned horses had been stolen. I saw one of these horses in November, 1885, on Mr. King's place, near Marion. I again condemned him. He was afterward killed by order of your Board. Before he was killed I inoculated him with matter from his own nose. I did so to see if self-inoculation with glanders virus would produce a farcy bud. I used a pocket-knife, sharpened on a stone at that time, to perform the operation. The matter was inserted under the skin, on the breast. I am informed by Mr. King that the inoculation produced no result whatever. The gray mare which Mr. Fike inoculated from this horse had fully developed the disease at the time I condemned her on June 8th. Had she not been killed she would have shortly died of glanders.

I think the eleven horses which Mr. King lost during 1885 were glandered from the Morris-county horse, which Mr. Fike claims he cured. The bay gelding which went from King's to Fike's undoubtedly is glandered. There are eight horses besides the five condemned ones on Mr. Fike's place, which present suspicious signs of glanders, and I have placed them in quarantine for further developments. In one small shed there is a gray stallion and a bay pony standing in close contact with each other. Mr. Fike says the pony is one of his fatal cases of glanders, but that, under his treatment, the stallion is in no danger of becoming infected. These two horses belong to different owners. They are at Fike's place for treatment. I do not know that either one is glandered; but I am sure that the defendant's practice of mingling glandered animals with others is most dangerous.

On motion of Mr. White, the hearing in this case was closed, and the case of Mr. McCray was called. No one responding, the report and affidavit of the State Veterinarian was read, and the case closed.

The Dougherty horse having been killed, the case was dismissed.

On motion of Mr. White, the Board adjourned to meet at Larned, on the 19th inst.

LARNED, KAS., June 19, 1886.

Board met at the Larned House, Larned, at 1 P. M., June 19, 1886. Present: Messrs. Kelley, White, and the Secretary.

. The minutes of the previous meetings were read and approved.

The Board having inspected the horses in quarantine owned by C. A. Alexander, and a bay mare owned by S. Brown, reported by the State Veterinarian as having glanders and farcy, Mr. White moved that close quarantine on C. A. Alexander's horses be raised, and that the owner be permitted to drive and use them, but that they be not hitched in public places or watered or fed from public troughs.

The State Veterinarian said: I respectfully enter protest against the raising of quarantine on these horses. While they are discharging but little from the nose, they are unquestionably glandered, and should not be permitted to enter the public streets or highways. I request that this protest be made a part of the records of this meeting. This request having been granted, the motion was put and carried.

The chair moved that Mr. S. Brown, in compliance with his request, be permitted to take his mare, reported as glandered, from the city of Larned to his pasture on the south side of the Arkansas river, in the county of Pawnee, there to be held isolated from all horses, mules and asses until further orders from this Board.

The State Veterinarian entered protest against removing the animal in question from the present quarantine, and asked to have this protest made a part of the records of the meeting. This request having been granted, the motion was put and carried.

The following accounts were allowed, and transmitted to the Attorney General, requesting his approval:

J. B. Favors, Dickinson county, serving notice of hearing on Dougherty.....	\$6 85
David Bowers, Barton county, killing and burying glandered horse.....	5 00
J. H. Drayer, Crawford county, killing and burying glandered horse.....	5 00
W. A. Rhinehart, Sumner county, killing and burying glandered horses.....	10 00
W. H. Braden, Crawford county, killing and burying glandered horses, etc.....	53 30
Hiram Scott, Ottawa county, killing and burying glandered horse.....	5 00
J. L. Smith, Reno county, killing and burying glandered horses, etc.....	25 50
J. H. Taylor, Jackson county, serving notice of quarantine.....	3 50
J. B. Kidder, Ellis county, killing and burying glandered horse, etc.....	6 00
Chas. Jones, Crawford county, killing and burying glandered horse.....	5 00
N. A. Ladue, Cloud county, killing and burying glandered horse.....	5 00
Eli Tindell, Cloud county, killing and burying glandered horse.....	5 00
Ezekiah Cooper, Clay county, killing and burying glandered mule.....	5 00
Jos. Fike, Marion county, killing and burying glandered horses.....	10 00
Ed. Marshall, Cloud county, mileage and livery.....	11 00
Fred. Lewis, Marion county, mileage and livery.....	6 60

Incidental expenses of E. R. Allen, Inspector, Kansas City, for April \$1.75, and for May \$1, were approved, and ordered paid from funds in the hands of the Secretary.

The account of Samuel Brown, Scranton, for killing and burying a glandered mule, in the summer of 1884, was returned, with the information that there were no funds from which said account could be paid.

The account of W. A. DeMoss, Sheriff of Pawnee county, was returned, with the request that it be itemized, as required by law.

On motion of Mr. White, the Board took a recess, to meet at the residence of Jos. Fike, Marion county, on the 20th inst.

LOST SPRINGS, KAS., June 20, 1886.

Board met, and inspected two horses belonging to Mr. Fike and one belonging to Mr. McCray.

On motion of Mr. White, the order of the Board was issued to the Sheriff of Marion county to kill and bury the mare owned by Mr. McCray, the said animal being infected with glanders.

On motion of the Chair, the further consideration of the Fike case was postponed until the next meeting of the Board.

On motion of Mr. White, the Board adjourned.

Approved: June 30, 1886.

A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

THIRTY-SECOND MEETING.

TOPEKA, KAS., June 30, 1886.

The thirty-second meeting of the Board was held in the office of the State Veterinarian, Topeka, Kas., June 30, 1886.

Board convened at 10 A.M. Present: Messrs. Kelly, Hamilton, White, and the Secretary.

Minutes of the previous meeting were read and approved.

J. W. Griffis, Sheriff of Chase county, was present and reported that he had branded all of the Terwilliger cattle, except the ninety-six head which had been wintered at Council Grove. By order of the Board, these ninety-six head may remain unbranded.

Upon the representation of J. W. Griffis that it was impossible to keep the quarantined cattle away from the boundary fences, as required by the order of May 15th, the following modification of the order was made: Close quarantine shall consist in holding the said cattle within the fence inclosing the premises described in the order aforesaid, and at least forty rods from all other cattle.

On motion of Mr. Hamilton, the following preamble and resolution was adopted:

Whereas, This Board is reliably informed that efforts have been made to bring cattle into this State in violation of the provisions of chapter 191, Laws of 1885: therefore, be it

Resolved, That for the better protection of the cattle interests of this State, it is necessary that an inspector be stationed at Baxter Springs and another at Coffeyville.

On motion of the Chairman, Mr. Hamilton was instructed to proceed at once to Baxter Springs and Coffeyville for the purpose of employing an inspector at each of said places, whose duties it shall be to guard the State against the introduction of cattle prohibited by chapter 191, Laws of 1885.

On motion of Mr. Hamilton, the Secretary was directed to issue the following request to all railroads doing business in this State:

Whereas, section 1, chapter 191, Laws of 1885, State of Kansas, provides that "No person or persons shall, between the first day of March and the first day of December of any year, drive or cause to be

driven into or through any county or part thereof in this State . . . any cattle capable of communicating or liable to impart what is known as Texas, splenic, or Spanish fever;" and

Whereas, section 5 of said law provides, that "when cattle are brought into this State from south of the thirty-seventh parallel of north latitude" this fact "shall be taken as *prima facie* evidence that such cattle are capable of communicating and liable to impart Texas, splenic, or Spanish fever within the meaning of this act;" and

Whereas, it is reported, and upon investigation by this Board it is found to be true, that such cattle have been brought into this State in violation of the provisions of said law; and whereas, it is the opinion of this board that the bringing of such cattle into Kansas greatly endangers the live-stock interests of the State:

Now, therefore, we, the Live-Stock Sanitary Commission of the State of Kansas, do herewith respectfully request that the — Railway Company shall refuse to accept for shipment into this State, from and after the receipt of this notice until the first day of December, 1886, all cattle coming from south of the thirty-seventh parallel of north latitude, unless said cattle are accompanied by a certificate, made under oath by the sheriff or county clerk of the county from which said cattle come or by the secretary of the cattle association to which the owner of said cattle may belong, showing that said cattle had been kept, since the first day of December, 1885, west of the east line of the Indian Territory and north of the thirty-sixth parallel of north latitude, or west of the twenty-first meridian of longitude west from Washington and north of the thirty-fourth parallel of north latitude.

On motion of Mr. White, the following circular was ordered printed, and sent to all sheriffs in the State:

Whereas, it is reported to this Board that certain cattle are seeking to enter the State of Kansas in violation of the provisions of chap. 191, Session Laws of 1885; and

Whereas, the entry of such cattle in violation of said law may prove disastrous to the live-stock interests of this State:

Now, therefore, we, the Live-Stock Sanitary Commission of the State of Kansas, do hereby direct that whenever you have notice or knowledge that there are within your county cattle coming from south of the 37th parallel of north latitude, to forthwith take charge of and restrain such cattle under such temporary quarantine regulations as will prevent the communication of disease, and make immediate report of your actions to this Commission.

You will also notify the owners, or persons in charge of such cattle, to be ready to show to this Commission, at such time and place as we may designate, where the said cattle have been held since the first day of December, 1885.

You will hold all cattle so quarantined until released by order of this Commission, and incur no more expense than is absolutely necessary. All expenses necessarily incurred by you while acting under the provisions of chap. 191, Session Laws of 1885, will be paid as provided for in sec. 3 of said law.

On motion of Mr. White, the Board found that one bay gelding and one gray gelding, the property of Jos. Fike, Marion county, are infected with glanders, and the order of the Board issued to the Sheriff of Marion county to kill and bury the said horses, according to law.

The incidental expense account of E. R. Allen, for month of June, was allowed, and ordered paid by the Secretary.

The following accounts were allowed, and transmitted to the Attorney General for his approval:

R. J. McIntyre, Cloud county, killing and burying glandered horse.....	\$ 5 00
J. H. Wilhite, Lyon county, " " " " "	5 00
Ed. Marshall, Cloud county, " " " " " horses.....	10 00
M. F. White, Jackson county, " " " " "	10 15
Jacob Rush, Ottawa county, " " " " "	10 00
W. A. DeMoss, Pawnee county, care glandered horses, etc.....	41 50

On motion of Mr. White, the Board adjourned.

Approved: August 27, 1886.

HABIBSON KELLEY, *Chairman.*

A. A. HOLCOMBE.

Secretary.

THIRTY-THIRD MEETING.

TOPEKA, Kas., August 27, 1886.

The thirty-third meeting of the Board was held in the State Veterinarian's office, Topeka, Kas., August 27, 1886.

Board convened at 10 A.M. Present: Messrs. Kelley, Hamilton, White, and the Secretary.

Minutes of the previous meeting were read and approved. Mr. Hamilton reported that, in compliance with the order of the Board of June 30th, he had appointed J. P. Holloman inspector at Baxter Springs, at a salary of \$75 per month, and Daniel Wells inspector at Coffeyville, at a salary of \$50 per month.

On motion of Mr. White, the appointments were confirmed, service to date from time of appointment, July 13, 1886.

Communication from J. P. Holloman, Baxter Springs, recommending that notices forbidding the entrance of Southern cattle be posted on the south line of the State, was read.

On motion of Mr. White, 100 copies of the circular of June 30th were ordered printed on muslin, and the inspectors directed to post them on the south line of the State.

Mr. Hamilton reported that he had placed in quarantine 23 head of Southern cattle in Sumner county, and 300 head in Harper county.

The Chair reported that he had placed in quarantine a herd of Southern cattle which had come into Morris county in March, and that he had directed the Sheriff of Morris county to notify the public not to use the grounds at Council Grove which had been infected by the Terwilliger cattle.

The State Veterinarian reported that he had made several post-mortem examinations upon animals that had died of Texas fever from pasturing on the grounds infected by the Terwilliger cattle at Council Grove and Matfield Green.

It having been reported to the Board that Southern cattle were entering the State at New Kiowa, and that there was an outbreak of Texas fever at that point, the Chair moved that Mr. Hamilton be directed to investigate the matter and take such action in the premises as might seem necessary. Carried.

The Chair presented affidavits from parties in Crawford county, representing that a horse owned by Levi Larcom, of Cherokee, had been unlawfully killed for having glanders.

After hearing the statement of Mr. White, who was present at the killing, the Board directed the Secretary to inform Mr. Larcom that in their opinion the said horse was lawfully killed.

The question of closing the quarantine station at Kansas City having been discussed, it was moved by Mr. White, and carried, that E. R. Allen continue to act as inspector at Kansas City during the month of September, the Kansas City Stock Yards Company to pay one-half of the salary—\$62.50.

The following accounts were allowed, and transmitted to the Attorney General for his approval:

Olof Nilson, Saline county, killing and burying glandered horse.....	\$ 5 00
Godfrey Lutz, Jackson county, killing and burying glandered horse.....	5 00
L. G. Keener, Crawford county, killing and burying glandered horse.....	5 00
T. C. Reily, Republic county, killing and burying glandered horse.....	10 00
J. P. Holloman, Inspector, Baxter Springs, salary to August 13th.....	75 00
Daniel Wells, Inspector, Coffeyville, salary to August 13th.....	50 00
E. R. Allen, Inspector, Kansas City, incidentals.....	1 70

The account of I. P. Couch, Harper county, was returned, with request that it be properly itemized.

The account of J. Carnes, M. D., Chase county, in the sum of \$25, for making a post-mortem examination, was returned, with the information that no authority existed for paying for such service.

On motion of Mr. White, notice of hearing was issued to W. E. Durand, Barton county, for October 5, 1886.

On motion of Mr. Hamilton, the Board adjourned.

Approved: Sept. 29, 1886.

A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

THIRTY-FOURTH MEETING.

SEDAN, CHAUTAUQUA Co., KAS., Sept. 28, 1886.

The thirty-fourth meeting of the Board was held in Sedan, Sept. 28, 1886. Board convened at 1 p. m. Present: Messrs. Kelley, Hamilton, White, and the Secretary.

Minutes of the previous meetings were laid over, to be read at another hour.

The Secretary reported that the meeting was called on the report of the Sheriff of Chautauqua county, that he had taken in charge certain cattle charged with having come into the State in violation of chap. 191, Laws of 1885.

Jas. Loyd, owner of the cattle, being present, testified that part of the cattle had been raised in the State of Kansas, but had gone into the Territory to graze. The remainder were raised about 35 miles south of the line; were certainly not capable of transmitting the fever.

The complaining witness, Jacob Bradford, being absent, the Board proceeded to Peru for the purpose of inspecting the cattle, and directed the Sheriff to summons Mr. Bradford to appear before the Board and testify.

PERU, Sept. 28, 1886.

Board met at 8 p. m. J. J. Adams, Sheriff, reported that Mr. Bradford did not desire to testify in the case, as he had never seen the cattle in question, and knew nothing of them except on report of others.

On motion of Mr. Hamilton, the following order was issued:

J. J. Adams, Sheriff of Chautauqua county, Sedan, Kansas—SIR: Whereas, the cattle belonging to Jas. Loyd, held in quarantine by you under the provisions of chapter 191, Laws of 1885, State of Kansas, have been declared by this Board incapable of transmitting Texas splenic or Spanish fever:

Now, therefore, you are hereby directed to release from further quarantine, and to deliver to the proper party, all of the said cattle so held by you on this 28th day of September, 1886.

On motion of Mr. White, the Board took a recess, to meet in Topeka on September 29th.

TOPEKA, KAS., September 29, 1886.

Board met in the office of the Secretary, at 10 A. M.

The minutes of the previous meeting were read and approved.

Mr. Hamilton reported that he had, in accordance with the instructions of the Board, on August 27th, investigated the report that Southern cattle were waiting near New Kiowa for an opportunity to unlawfully enter the State. Could not learn that any such cattle had entered the State, nor did he believe they would attempt to do so, for the reason that public opinion there was strongly opposed to it. There were some cases of Texas fever at that point, but the disease had been contracted while crossing the trail while the cattle infected were en route to Kiowa for shipment.

On motion of Mr. White, the following preamble and resolution were adopted and addressed to the Governor:

To His Excellency the Governor of Kansas—SIR: Whereas, reliable information has reached the Live-Stock Sanitary Commission of the State of Kansas that contagious pleuro-pneumonia of cattle has made its appearance in a large number of animals within the States of Illinois and Ohio, and the Dominion of Canada; and

Whereas, the cattle interests of the State of Kansas are greatly endangered by the prevalence of this plague, at points situated on the principal avenues of the live-stock traffic of the country, thereby making it possible for the disease to become widespread; and

Whereas, an outbreak of this disease within the State of Kansas would greatly depreciate the value of our cattle and close the markets of the world against our beef:

Now, therefore, we, the Live-Stock Sanitary Commission of the State of Kansas, do herewith respectfully request his Excellency the Governor of Kansas to issue a proclamation of quarantine against the introduction to this State of all animals of the bovine species coming from the States of Ohio and Illinois, and from the Dominion of Canada, unless all such cattle are quarantined at the point of entry for a period of ninety days, and retained there until they shall receive a certificate of health signed by the State Veterinarian.

On motion of Mr. White, the following preamble and resolutions were adopted:

Whereas, Recent and extensive outbreaks of contagious pleuro-pneumonia in cattle in neighboring States make it possible for this State to become infected unless the most stringent and effective protective measures are at once adopted; and

Whereas, This Board believes that it should have some practical knowledge of the disease, gained by an examination of living cases, and from witnessing the lesions presented by the diseased dead, in that they may intelligently adopt the measures necessary for the proper protection of the cattle interests of the State, or suppress speedily an outbreak if it should occur: therefore, be it

Resolved, That we, the Live-Stock Sanitary Commission of the State of Kansas, will, on October the 4th, 1886, proceed to Chicago, and there make such investigations of this disease as may seem proper.

And be it further resolved, That the State Veterinarian is hereby directed to accompany the Board.

The following accounts were allowed, and referred to the Attorney General for his approval:

I. P. Couch, Harper county, mileage, etc!	\$19 10
A. L. Matthews, Reno county, killing and burying glandered horse.....	5 00
James Springer, Republic county, killing and burying glandered horse.....	5 00
H. L. Miner.....	5 00
H. T. Dodson, El Dorado, mileage.....	2 50
Daniel Wells, salary as Inspector at Coffeyville.....	50 00
I. P. Holloman, salary as Inspector at Baxter Springs.....	75 00
E. R. Allen, salary as Inspector at Kansas City.....	62 80

On motion of Mr. Hamilton, the hearing of W. E. Durand was postponed from October 5th to October 19, 1886.

On motion of Mr. White, the Board adjourned.

Approved: October 13, 1886.

A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

THIRTY-FIFTH MEETING.

KANSAS CITY, October 4, 1886.

The thirty-fifth meeting of the Board took place at Kansas City, Mo., at 6 p. m., October 4, 1886. Members present: Messrs. Kelley, Hamilton, White, and the Secretary. The Board proceeded to Chicago, where they arrived on the 5th instant. At 9 p. m. on this date, a conference was held in the Grand Pacific Hotel, with the Sanitary Commission of Illinois. That Board reported that the outbreak of contagious pleuro-pneumonia in Chicago was a serious one. Between two and three thousand animals were either affected or had been exposed. How the disease was introduced, and the extent of the infection, had not yet been determined. Active inspection and investigation of the matter was being continuously made. All possible precautions are being taken to prevent its further spread. Strict quarantine regulations are maintained on all infected and exposed animals and premises. No animal shall be taken from quarantine except to be slaughtered.

On invitation of the Illinois Commission, the Board visited the Phœnix distillery on the morning of the 6th, and made an inspection of the infected animals found there. A cow which had been suffering from pleuro-pneumonia for about two weeks, was selected by Dr. Trumbower, and destroyed. The post-mortem examination revealed marked adhesions between the right lung and the chest walls and diaphragm; the cavity of the chest contained about two gallons of a pale, straw-colored fluid, in which floated a great mass of coagulated fibrin. The heart sac contained an excess of fluid, and in places had formed adhesions with the lungs. About two-thirds of the right lung was hardened, of a reddish-brown color, and when cut across showed the thick whitish bands dividing the lung substance into small, angular spaces. Above the parts most seriously affected was another portion, the outlines of which were well defined, that presented the same characteristics in a lesser degree. Above

this portion the lung seemed perfectly healthy. The left lung showed no signs of disease. This animal was in moderate flesh, was said to have a fair appetite, but stood with back arched, had an occasional husky cough, while the hair was rough, dry, and staring.

During the afternoon a piece of lung, said to have been taken from a cow killed on the commons, was exhibited to the Board. It presented the same characteristics as witnessed in the lower portion of the lung seen in the case described above.

On motion of Mr. White, the Secretary was instructed to enter upon the minutes a description of the post-mortem appearances seen, and the Board adjourned to meet in Topeka on the 13th inst.

A. A. HOLCOMBE, *Secretary.*

Approved: October 13, 1886.

HARRISON KELLEY, *Chairman.*

THIRTY-SIXTH MEETING.

TOPEKA, KAS., October 13, 1886.

The thirty-sixth meeting of the Board was held in the Secretary's office, Topeka, October 13, 1886.

Board convened at 4 p. m. Present: Messrs. Kelley, Hamilton, White, and the Secretary.

The minutes of the previous meeting were read and approved. Communication from J. S. Leeds, General Freight Agent of the Atchison, Topeka & Santa Fé Railroad, was read, in which inquiry was made as to whether stock cars were required to be disinfected. Secretary was instructed to reply that probably no order to disinfect such cars would be issued by the Board until next spring.

Communications from the Secretary of the Ohio Live-Stock Commissioners, asking that quarantine against Ohio cattle be raised, for the reason that the State was not infected as had been reported, were read.

On motion of Mr. Hamilton, the Governor was requested to raise the quarantine on Ohio cattle.

On motion of Mr. White, the following quarantine rules and regulations were adopted, ordered printed, and distributed to all interested parties:

TOPEKA, KANSAS, October 13, 1886.

To whom it may concern: The "rules and regulations governing quarantine and the admission of cattle into Kansas," as issued by this Board, dated Topeka, Kansas, May 2d, 1885, are hereby revoked.

From and after this date, and until further notice, all cattle coming to Kansas from that portion of New York lying south of the north line of the State of Connecticut, all of Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia, Virginia, West Virginia,* Illinois, and the Dominion of Canada,† will be required to enter the State at Kansas City, where they will be held in quarantine, at the risk and expense of the owner, for a period of ninety days, or until they shall receive a bill of health signed by the State Veterinarian of Kansas.

All railroad, express, and other transportation companies are forbidden to bring any cattle into this State from the above-named quarantined districts, except in compliance with the foregoing rules and regulations.

By order of the Live-Stock Sanitary Commission, State of Kansas.

A. A. HOLCOMBE, *Secretary.*

The State Veterinarian reported that he had, on Oct. 2, placed in quarantine a herd of cattle owned by the Abilene Cattle Co., which had infected a number of cattle in Dickinson county with Texas fever.

On motion of Mr. Hamilton, the State Veterinarian's order of quarantine was confirmed, and the cattle ordered held by the Sheriff of Dickinson county, until released by this Board.

* Governor's proclamation, April 15th, 1885.

† Governor's proclamation, September 30th, 1886.

The following accounts were allowed:

E. M. Crummer, Republic county, killing and burying two glandered horses.....	\$10 00
A. P. Meek, Jackson county " " " 10 00	
J. J. Adams, expense of quarantining and holding Loyd cattle, Sedan, Chautauqua county, \$23.30—allowed in the sum of.....	16 30

Mr. White reported that there was an outbreak of Texas fever in the eastern part of Ottawa county. The Board directed Mr. White and the State Veterinarian to investigate the matter, and to take such action in the premises as should be necessary.

The Secretary reported that he had set for hearing on October 14th, the case of Jerome Kunkel, Lecompton, charged by the State Veterinarian with keeping two glandered horses.

On motion of Mr. Hamilton, the Board adjourned.

LECOMPTON, October 14, 1886.

Board met at 9 A. M., and inspected the reported animals. Mr. Kunkel objected to having the horses killed for the reason that he did not believe they were glandered. The State Veterinarian condemned one of them nearly two years ago. Had killed two horses with glanders two years ago that were condemned by the State Veterinarian. Wanted to use these as he pleased.

Board ordered that the quarantine should be raised, but that the horses should not be hitched, fed, or watered in public places.

On motion of Mr. White, the Board adjourned.

Approved: November 6, 1886.

A. A. HOLCOMBE, Secretary.

HARRISON KELLEY, Chairman.

THIRTY-SEVENTH MEETING.

GREAT BEND, KAS., October 19, 1886.

The thirty-seventh meeting of the Board was held at Great Bend, on October 19, 1886.

Board convened at 1:30 P. M. Present: Messrs. Kelley, White, and the Secretary.

The minutes of the previous meeting were laid over for reading at the next meeting.

The case of W. E. Durand was called for hearing, and the report and affidavit of the State Veterinarian read.

G. W. Nimmocks appeared as counsel for Mr. Durand, and said: We are not satisfied that the mare in question is glandered as charged. We desire to have her kept until we are satisfied that she is so diseased.

The Board, having inspected the animal, ordered that she be held in quarantine until further orders.

A communication was read from Mr. Terwilliger, asking that his quarantined cattle be permitted to graze at night on account of the grass being poor. J. W. Griffis, Sheriff of Chase county, recommended that this concession be made. On motion of Mr. White, it was so ordered.

A communication from the *Breeders' Gazette*, Chicago, asking for information regarding Kansas quarantine rules, was read, and the Secretary instructed to reply.

Account of Daniel Wells, inspector, in the sum of \$50 for month ending October 13, 1886, was approved.

On motion of Mr. White, the Board adjourned.

Approved: November 6, 1886.

A. A. HOLCOMBE, Secretary.

HARRISON KELLEY, Chairman.

THIRTY-EIGHTH MEETING.

TOPEKA, KAS., November 6, 1886.

The thirty-eighth meeting of the Board was held in the Secretary's office, Topeka, November 6, 1886. Present: Messrs. Kelley, Hamilton, White, and the Secretary.

Board convened at 10 A. M. The minutes of the two preceding meetings were read and approved.

The Secretary reported that he had received information that some of the Henry cattle, which came from near Chicago, and had been sold during the Kansas City Fat-Stock Show, had entered the State on the night of October 29th, in violation of the quarantine rules.

E. R. Allen, inspector at Kansas City, was present, and furnished the following list of parties receiving such cattle:

W. E. Treadwell, Harper.....	3 head
J. McCoy, Williamstown	1 "
Shockey & Gibb, Lawrence.....	8 "
R. Muir, Salina	7 "
Finch, Lord & Nelson, Burlingame.....	5 "
Morgan & Parrish, Irving.....	2 "

After a consultation with the Attorney General of State, the Board requested him to bring suit against G. W. Henry in the district court of Wyandotte county, Kas., for a violation of the quarantine regulations of the State of Kansas.

By direction of the Board Mr. Hamilton will visit Messrs. Treadwell, McCoy, and Shockey & Gibb; General Kelley, Messrs. Finch, Lord & Nelson; and Mr. White, Messrs. Muir, Morgan & Parrish, and place in quarantine for a period of ninety days such cattle as may be found on their respective premises which have come into the State in violation of the law.

Mr. Hamilton was further instructed to investigate the report of the Sheriff of Crawford county, that there were certain cattle in his county which were believed to be capable of transmitting Texas fever; and also the outbreak of disease among cattle at Independence reported to be pleuro-pneumonia.

The State Veterinarian reported a case of glanders, owned by Jos. E. Larue, Smith county, in which the owner waived his right to a hearing, and desired to have the animal killed, according to law.

On motion of Mr. White, the order of the Board was issued to the Sheriff of Smith county, commanding the killing of said animal for glanders.

Account of M. L. Green, Harper county, for killing and burying a glandered horse and mule, allowed in the sum of \$10.

The Secretary was instructed to inform the inspectors at Baxter Springs and Coffeyville, that their terms of service would expire on November 13, 1886.

On motion of Mr. White, the Board adjourned.

Approved: November 30, 1886.

A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

THIRTY-NINTH MEETING.

KANSAS CITY, Nov. 13, 1886.

The thirty-ninth meeting of the Board was held in Kansas City, Nov. 13, 1886, Present: Messrs. Kelly, Hamilton, and White. Absent, the Secretary.

On motion of Mr. Hamilton, Mr. White was made Secretary *pro tem.*

Reading of the minutes of the preceding meeting was laid over.

Mr. Hamilton reported that in compliance with the order of the Board on November 6th, he had quarantined for ninety days, 4 head of Illinois cattle for Shockey & Gibb, Lawrence, and one for J. McCoy, Williamstown. The Treadwell cattle were

said to be Missouri cattle; the cattle in charge of the sheriff of Crawford county were owned by H. T. Potter, and had come from the Indian Territory; they were ordered held until released by the Board; the disease at Independence had subsided.

General Kelley reported that he had quarantined the 4 head of Illinois cattle for ninety days, which he found on the premises of Finch, Lord & Nelson, Burlingame.

Mr. White reported having quarantined for 90 days, one cow for Robt. Muir, Salina; one for Mr. Morgan, of Irving, and one for Mr. Parrish, of Frankfort, all of which had come from Illinois.

On motion of Mr. Hamilton, the following preamble and resolution were adopted:

Whereas, A meeting of State veterinarians and live-stock sanitary boards has been called for Nov. 15th and 16th, in the city of Chicago, for the purpose of considering quarantine matters relating to the various States and Territories; and

Whereas, In the opinion of this Board it is desirable that the State of Kansas should be represented at the said meeting, in order that a uniform code of rules and regulations governing quarantine may, if possible, be adopted for all the Western States and Territories, in that all unnecessary restrictions upon the cattle traffic may be removed: therefore, be it

Resolved, by the *Live-Stock Sanitary Commission of the State of Kansas*, That Harrison Kelley, Chairman of the Board, be and hereby is directed to be present at the said meeting, to represent the interests of the State of Kansas.

The Secretary was instructed to direct all sheriffs in the State having Southern cattle in quarantine under the orders of this Board, to present their accounts at the office of the Secretary on or before November 30, 1886; also to notify the owners of said cattle that if said expenses, when approved by this Board, were not paid on or before December 10, 1886, sufficient of said cattle shall be advertised and sold as provided by law for the liquidation of the expenses before mentioned.

On motion of Mr. Hamilton, Board adjourned to meet in Topeka on November 30, 1886.

J. T. WHITE, *Secretary pro tem.*

Approved: November 30, 1886.

HARRISON KELLY, *Chairman.*

FORTIETH MEETING.

TOPEKA, KAS., November 30, 1886.

The fortieth meeting of the Board was held in the Secretary's office, Topeka, November 30, 1886.

Board convened at 10 A. M. Present: Messrs. Kelley, Hamilton, White, and the Secretary.

The minutes of the two preceding meetings were read and approved.

The account of the Sheriff of Chase county, in the sum of \$498, having been approved by the Board and paid by S. F. Jones, agent for W. R. Terwilliger, the Board ordered the release of the cattle from further quarantine.

Account of W. H. Braden, Sheriff of Crawford county, for quarantine expenses on cattle of H. T. Potter, was approved, and Mr. Potter notified that unless said account is paid on or before December 10, 1886, the sheriff will be ordered to sell sufficient of said cattle to liquidate the expense, \$4.

Account of S. J. Powell, Sheriff of Ottawa county, for quarantining cattle, etc., in the sum or \$140.80, was approved for \$13.80.

Accounts of J. A. Taylor, killing glandered horse, Coffey county.....	\$5 00
Jas. Johnson, killing glandered horse, Smith county.....	5 00
E. E. Hodson, killing glandered horses, Smith county.....	10 00
F. M. Carson, killing glandered horses, Smith county.....	30 60
E. R. Allen, inspector, Kansas City.....	127 65
J. P. Holloman, inspector, Baxter Springs.....	75 00
W. W. Bartlett, Salina, cleaning and disinfecting car.....	4 40

—were allowed, and referred to the Attorney General for approval.

The Secretary was directed to notify the Sheriff of Dickinson county that his account against the Abilene Cattle Company should be forwarded without delay.

On motion of Mr. Hamilton, the quarantine rules and regulations were amended to read as follows:

TOPEKA, KANSAS, November 30, 1886.

To whom it may concern: The "Kansas quarantine rules and regulations," as issued by this Board, dated Topeka, Kansas, October 13, 1886, are hereby revoked.

From and after this date, and until further notice, all cattle coming to Kansas from that portion of New York lying south of the north line of the State of Connecticut, all of Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia, Virginia, West Virginia,* Illinois, and the Dominion of Canada,† will be required to enter the State at Kansas City, where they will be held in quarantine, at the risk and expense of the owner, for a period of ninety days, and until they shall have received a bill of health signed by the State Veterinarian of Kansas.

Cattle from all other districts may enter the State, provided the shipper satisfies the State Inspector at Kansas City that they are healthy, and have not been exposed to any contagious or infectious disease.

All railroad, express, and other transportation companies are forbidden to bring any cattle into this State, except in compliance with the foregoing rules and regulations.

By order of the Live-Stock Sanitary Commission, State of Kansas.

A. A. HOLCOMBE, *Secretary.*

The Secretary was directed, on motion of Mr. Hamilton, to send a copy of the following letter to all railroad companies doing business from Kansas City:

It has come to the knowledge of the Live-Stock Sanitary Commission of the State of Kansas that there have been several violations of the rules and regulations governing the quarantine against certain States and districts east of the Mississippi river. These violations have resulted in cattle entering the State that, under strict application of the rules, would have been placed in quarantine at the State line. The trouble seems to arise with the various railroad agents and clerks who do the billing of live stock at Kansas City, who, in reading our regulations, interpret them as permitting all stock to be forwarded that is not specifically excluded by the rules. The rules and regulations of November 30, 1886, name those districts from which cattle will not be admitted into the State except after ninety days' quarantine.

Cattle from other districts may enter the State, provided the shipper satisfies the State Inspector at Kansas City that they are healthy, and have not been exposed to any contagious or infectious disease. When this evidence is satisfactory to the Inspector, he will issue his official permit; and this permit, and this only, will be your authority for receiving any shipments of cattle to be unloaded at any station in the State of Kansas, except Kansas City.

Therefore, you are hereby respectfully requested to instruct your office at Kansas City to receive no cattle for shipment into this State, either from the stock yards, connecting lines, or on foot, unless the party in charge has a permit covering the full number of cattle, signed by the Inspector at Kansas City.

By order of the Live-Stock Sanitary Commission, State of Kansas.

TOPEKA, KAS., November 30, 1886.

A. A. HOLCOMBE, *Secretary.*

The Secretary was directed to prepare the annual report of the Board for the printer.

On motion of Mr. White, the Board adjourned.

Approved: December 22, 1886.

A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

FORTY-FIRST MEETING.

TOPEKA, KAS., December 22, 1886.

The forty-first meeting of the Board was held in the office of the Secretary, Topeka, Kas., December 22, 1886.

Session of the Board was called at 10:30 a. m. Present: Messrs. Kelley, White, and the Secretary. Absent: J. W. Hamilton.

Minutes of the previous meeting were read and approved.

The Secretary's draft of the third annual report of the Board was read, discussed, amended, ordered completed, signed, and delivered to the Govenor.

* Governor's proclamation, April 15th, 1885.

† Governor's proclamation, September 30th, 1886.

The account of the Sheriff of Dickinson county, in the sum of \$92.90, for holding in quarantine, care, feeding, etc., cattle belonging to the Abilene Cattle Company during the months of October and November, 1886, as ordered by this Board, was deemed extortionate, and was not approved; but inasmuch as the account had been paid by the Company before it had been submitted to this Board for action, as required by law, the bill was ordered filed, indorsed with aforesaid action.

The order of the Secretary to release the said cattle was confirmed.

The following order, issued by direction of this Board, was made a part of the records of this meeting:

W. H. Braden, Esq., Sheriff of Crawford county, Girard, Kansas—SIR: Whereas, it was reported to this Board on October 31st, 1886, by W. H. Braden, Sheriff of the county of Crawford, State of Kansas, that he had, on complaint of a citizen of this State, placed in temporary quarantine certain cattle owned by H. T. Potter, of Crawford county, Kansas, said cattle having come into this State in violation of chapter 191, Laws of 1885; and

Whereas, the costs and expenses of taking, detaining and holding said cattle have not been paid by the said H. T. Potter, as provided by section 3 of said law:

Therefore, you are hereby commanded by the Live-Stock Sanitary Commission of the State of Kansas, to advertise in the same manner as is by law provided in cases of sales of personal property, that you will sell such cattle or such portions thereof as may be necessary to pay such costs and expenses, besides the expenses of such sale; and at the time and place so advertised, you will proceed to sell as many of said cattle as shall be necessary to pay off such costs and expenses and the expenses of sale, and shall forthwith pay over to the Live-Stock Sanitary Commission any amount so received in excess of the legal fees and expenses by you incurred.

By order of the Live-Stock Sanitary Commission of the State of Kansas.

A. A. HOLCOMBE, *Secretary.*

The following accounts were approved, and referred to the Attorney General:

O. Gorby, Peru, Chautauqua county, killing and burying glandered horse.....	\$5 00
Hugh Stewart, Ottawa county, killing and burying glandered horse.....	5 00

Account of H. T. Hamer, Sheriff of Morris county, in the sum of \$3, for posting quarantine notices on grounds infected by cattle of W. R. Terwilliger, allowed and paid.

On motion of Mr. White, the Board adjourned, to meet at the call of the Secretary.

Approved: December 22, 1886. A. A. HOLCOMBE, *Secretary.*

HARRISON KELLEY, *Chairman.*

CONTAGIOUS PLEURO-PNEUMONIA.

The developments in the past twelve months in this disease have not been encouraging. While the States of Kentucky and Tennessee report its suppression within their borders, Illinois and Canada have had outbreaks which threaten disastrous consequences to the cattle interests of the whole country unless they can be subjected to speedy control and suppression.

As the records of our meetings will show, we have taken such action as has been possible under the circumstances, to protect the State against the introduction of this most dangerous plague. Soon after the reports of the outbreak in Illinois were confirmed, we deemed that it would prove of inestimable value to this Commission, in case the disease should appear in this State, to have some personal knowledge of the malady from actual experience, and for the purpose of gaining this knowledge our Board visited

Chicago during the early part of October, where we inspected the surroundings and sanitary conditions of the infected herds. We also saw animals in all stages of the disease, their condition before and after infection, as well as the peculiar lesions characteristic of pleuro-pneumonia on post-mortem examination. This experience had by the members of the Board, none of whom, except the State Veterinarian, had ever seen the disease, has removed any doubt which we might previously have entertained as to the malignancy of the trouble, and confirmed our belief that all possible measures for our protection against infection should be rigidly maintained. We believe that this information could have been obtained in no better way, and it can now be used in the interest of the State at any future time, should we have the misfortune to become infected.

The rules and regulations governing quarantine and the admission of cattle to the State, as adopted by our Board on November 30, 1886, under your Excellency's proclamation of September 30, 1886, provide that no cattle from the proscribed territory shall enter Kansas unless they undergo a quarantine of 90 days at the point of entry. It is also further provided, that all such cattle shall enter the State at Kansas City, at which point an inspector is kept in the employ of the State, whose duty it is to inspect all cattle desiring to enter Kansas. Upon proper and satisfactory showing, all cattle coming from districts not named in the proclamation referred to are issued a permit entitling them to enter the State. Under these provisions of our regulations, 21 animals are now held in quarantine at Kansas City, on grounds furnished by the Stock Yards Company without expense to the State. These grounds are isolated and well adapted to the purpose, but they are small and can accommodate but a small number of animals, so that in case several shipments of cattle should demand quarantine accommodations, we would be compelled to make further provisions in this respect. But judging from our experience of the last three months, we are disposed to believe that but a few owners will desire to undergo the expense and detention of quarantine, for we find that it is the practice now to sell in the Kansas City market all animals coming from infected localities, and which are denied admittance to the State except on compliance with our detention of 90 days.

This condition of affairs is to be deplored, for the reason that this practice makes it quite possible for an outbreak of the disease to occur in the neighborhood of Kansas City. Of course it is not within the power of this Board to prevent the sale of the cattle under these circumstances, yet an outbreak of pleuro-pneumonia at or near the Kansas City market would prove as disastrous to the cattle interests of the State as an outbreak within our borders, for this market receives most of the cattle sold by the citizens of Kansas, and any embargo placed on the Kansas City market will depreciate the value of all stock which finds a market at or through this point.

For these reasons it seems to this Board that unless the State of Missouri

shall, at the forthcoming session of the Legislature, provide some adequate means whereby this practice shall be prevented, Kansas will be compelled to class the cattle of Missouri with those of infected territories, thereby denying them admittance to the State unless they shall first undergo a quarantine of ninety days at the point of entry.

The question as to whether one quarantine station and point of entry for cattle from the excepted territories is all that should be maintained, is one which has received earnest consideration at our hands. While we recognize fully the fact that with so open and extended a border as is that of this State, it is impossible to exclude all animals that may come from dangerous localities if their owners are disposed to risk detection and prosecution by violating the rules and regulations governing quarantine, we believe the severity of the penalties imposed for such violations afford such reasonable protection to our interests as can be expected under the circumstances. To place inspectors at all the principal points of entry to the State would entail an expense which this Board is not disposed to incur, notwithstanding the fact that any reasonable expense in keeping the disease out of the State would prove much more economical than the expense of suppressing an outbreak.

If, however, an outbreak of this disease should occur within our borders, it is doubtful if it could be speedily suppressed, for the want of sufficient funds. The average monthly expenditure of money from the appropriation made to cover the expenses of the State Veterinarian, this Board, etc., is about \$750, so that by the first of April of any year not more than about \$4,000 are available. In case of an outbreak this sum would prove inadequate with which to meet the emergencies of the situation, and to be compelled to submit for an indefinite time to the restrictions which other States would at once impose on our cattle traffic, would entail hardships and losses which no one can estimate at this time.

When the outbreak in Illinois was recently discovered, that State had at her command \$50,000 with which to enforce the necessary measures of suppression, and yet this sum was not sufficient with which to meet the emergency, for it was learned within a few weeks' time that nearly 5,000 head of cattle were either diseased or had been exposed to infection. Unfortunately, as it seems to us, there exists a lack of uniformity in the laws of Illinois and of the United States, whereby the Government is unable to lend assistance in the matter of compensating owners for loss of property, for that State can only pay for exposed animals in which the disease has not yet appeared, while the Federal law provides that only diseased animals may be paid for after appraisement has been made under the laws of the State. All the expense of compensating owners for the losses sustained therefore falls upon the State, and the delays which have resulted from the effort made to reach some satisfactory understanding with the parties owning cattle which it has been found necessary to slaughter, have proven highly disadvantageous in many respects.

The expense of suppressing the disease in Illinois, even if it should prove to be confined to its present limits, is variously estimated at from \$150,000 to \$200,000, to say nothing of the losses resulting from the depreciation in prices and the restraints imposed on cattle traffic. In two respects, however, Kansas is more fortunately situated than Illinois: First, we have no large city, like Chicago, in which the disease might lurk for months without detection, and from which it is almost impossible to eradicate it; and secondly, our statute so conforms to the provisions of the Federal law on the subject that assistance from that source might be expected, both in the enforcement of necessary sanitary regulations and in paying for diseased animals destroyed.

For the reasons heretofore set forth, and in view of the possibility that an outbreak of this disease may occur at any time, within our borders, we respectfully but urgently recommend that the forthcoming Legislature shall make a special appropriation whereby the sum of \$25,000 shall be set aside, to be used only for the purpose of suppressing an outbreak of contagious pleuro-pneumonia within the State.

GLANDERS AND FARCY.

The demands made by the citizens of the State that animals supposed to be infected with glanders or farcy should be inspected, have not been so numerous as during the year 1885. Whether this means that the disease is less prevalent than heretofore, is an open question. The fact that glandered animals killed under the provisions of the law are not paid for by the State, has become so generally known that many owners of such animals sell or trade them away in preference to reporting them to the authorities. The practice, however, is likely to be checked by the prosecutions which have recently been instituted against some of the guilty parties. Furthermore, the general distribution of special reports, setting forth the nature and symptoms of the disease, and warning the public of the danger to be apprehended from the purchase of animals showing signs of being diseased, is undoubtedly bearing fruit.

During the past nine months the State Veterinarian has employed at his own expense, a clerk to assist with the office work, whereby he has been enabled to devote considerable time to this subject. In this effort to suppress the disease, this Board has rendered all possible assistance, yet many reported cases remain uninspected for the want of time. The report of our Secretary shows that 117 head of horses and mules have been condemned during the year, of which number 92 have been killed, while the remainder are held in quarantine by desire of the owners.

But three animals have been ordered killed in opposition to the wishes of the owners.

It will be seen, however, that of the 66 counties reporting suspected cases of the disease, only 35 counties have been in whole or in part inspected.

In making these inspections a member of the Board has accompanied the State Veterinarian whenever practicable so to do, and as a consequence, most of the condemned animals have been killed without delay. But the number of cases reported is so large, and the territory in which they are found so broad, that one inspector cannot give the matter that time and attention which the subject demands. The other imperative duties devolving upon the State Veterinarian, certainly preclude him from devoting to this matter such constant attention as is necessary for the suppression of a disease characterized by so long and insidious a course as is glanders.

We believe it would be to the best interests of the State, to have all suspected cases of glanders and farcy disposed of without delay; and for the purpose of securing this result, we again recommend that legislative provision be made, whereby, upon the recommendation of this Board, an assistant to the State Veterinarian, may be appointed whenever the necessity therefor is imperative.

Finally, we still entertain the opinion that glanders and farcy could best be exterminated under a special statute containing provisions similar to those set forth in the bill which we have recommended in both of our previous reports.

TEXAS FEVER.

The Texas fever law of 1885 has again proven capable of protecting the cattle interests of the State. We do not mean by this that it has entirely prevented the entry of dangerous animals, for no law probably could do that, but that it has furnished the machinery whereby such animals may be so held as to cause small losses only, which losses must be paid for by the cattle responsible for the damage.

Six bunches of cattle have been taken charge of during the summer for having come into the State in violation of the law. The first herd was quarantined early in May. They came from the southeastern part of the Indian Territory to Council Grove, where they remained for a few days, after which they were driven across the country to the southern part of Chase county. At this point they were held and carefully guarded until Dec. 1st, when, upon payment of all costs and expenses incurred, they were released. But notwithstanding the weather was cold and wet at the time, and the season early, the trail made by the animals proved capable, during the hot summer weather, of infecting a number of natives which grazed thereon. About thirty head of cattle are reported to have died from this exposure.

Another lot of cows and calves, bought by parties in Dickinson county, were turned in with some of their natives, several of which died about the first of October. These cattle were bought on the representation of the seller that they had been wintered in Kansas, so that no violation of the law was intended by bringing these animals into the State. They were held in quarantine from Oct. 1st to Dec. 1st. The other four lots, in so far as we know, never communicated the disease to other animals. A few steers died in the State, late in the season, from having contracted the disease while en route to market, but the losses all told we believe could be covered by the sum of \$5,000.

The expense to the State has been the employment of two inspectors on the south line of the State, for a period of four months each, at a cost of \$500 in all.

HARRISON KELLEY,
J. W. HAMILTON,
J. T. WHITE,

TOPEKA, KAS., December 31, 1886.

Sanitary Commission.

FUNDS EXPENDED DURING THE YEAR.

A. A. Holcombe, salary as State Veterinarian.....	\$2,500 00
A. A. Holcombe, traveling expenses, postage, telegrams, expressage, etc.....	1,412 75
Harrison Kelley, per diem and traveling expenses.....	742 62
J. W. Hamilton, per diem and traveling expenses.....	952 62
J. T. White, per diem and traveling expenses.....	1,093 65
E. R. Allen, Inspector at Kansas City, salary.....	1,437 00
E. R. Allen, incidental expenses.....	4 30
J. P. Holloway, Inspector at Baxter Springs.....	300 00
Daniel Wells, Inspector at Coffeyville.....	200 00
Sheriffs' fees, killing and burying glandered horses, mileage, etc.....	1,450 01
 Total for the year.....	 \$10,092 95
 Funds expended first half of fiscal year ending June 30, 1886.....	 \$3,516 09
Funds expended second half of fiscal year ending June 30, 1886.....	5,462 74
 Total.....	 \$8,978 83
Returned to treasury, balance.....	1,021 17
 Funds expended first half of fiscal year ending June 30, 1887.....	 \$4,630 21
Balance.....	5,369 79

REPORT OF THE STATE VETERINARIAN.

To the Live-Stock Sanitary Commission of the State of Kansas:

GENTLEMEN—I have the honor to submit herewith the third annual report of the State Veterinarian, which covers the year ending December 31, 1886.

During this period 874 communications have been received, and are now on file. They relate to the following subjects: 320 to glanders and farcy; 14 to hog cholera; 36 to indigestion in cattle; 36 to Texas fever; 6 to black-leg; and the remainder to other diseases, and miscellaneous matters pertaining to the duties of the office.

Nine hundred and nineteen letters have been written and sent out by mail, beside about 11,000 reports, circulars, proclamations, quarantine rules, and other printed matter. During the past nine months I have employed a clerk at my own expense, whereby I have been able to devote nearly all my time to the field duties of the office. I believe it would prove an economy for the State to provide for the performance of these clerical duties.

CONTAGIOUS PLEURO-PNEUMONIA OF CATTLE.

The State is still free from this disease. The outbreaks which have occurred during the year in Illinois and Canada can hardly be said to encourage the hope that we are in no danger of becoming infected. Kentucky and Tennessee, early in the year, reported that they had suppressed the disease within their borders, and it was generally believed that no other cases existed west of the Alleghany mountains. I have since been told, however, that the Bureau of Animal Industry had good reason to believe so long ago as last January or February that the disease had not been completely eradicated from Illinois. But be this as it may, the malady has undoubtedly been lurking in the stables of Chicago for many months, and its accidental discovery late in the summer has shown it to be the most unfortunate outbreak for the cattle interests of the whole country that has ever happened on this continent. Not only does it imperil the traffic of one of the greatest cattle marts in the world, but it also makes it possible for the disease to become widespread, unless it shall be suppressed without delay. A somewhat extended experience with this insidious malady leads me to doubt that this will be done, for the obstacles to be overcome in a city like Chicago make it well-nigh impossible to enforce effectual quarantine measures. The combined forces of the State and National governments may, however, accomplish the desired end.

While I fully appreciate that the local quarantines established by the various States prove a serious restriction upon the cattle industry of the country, they are undoubtedly necessary, in the absence of such Federal legislation as will effectually prevent the movement of all diseased and exposed animals.

Believing, as I do, that no reasonable expense or effort should be spared whereby the disease may be kept out of the State, I am led to question whether the enforcement of the rules and regulations of quarantine, as adopted by your Honorable Board on November 30th, affords us all the protection needed. I recognize fully that our eastern border is so long and open that to absolutely prevent the introduction of animals which may have come from dangerous localities is not possible. I believe, however, that if the necessary funds were available to meet the expense, such points as St. Joseph, Atchison, Leavenworth, Fort Scott and Columbus, should be guarded by inspectors, as well as that most important of all points, Kansas City. Establishing points of entry at these places would entail an additional expense of about \$5,000 a year—a sum insignificant in comparison with the losses we would sustain from an outbreak of the disease. I earnestly commend the matter to your consideration, knowing that your zeal in protecting our live-stock interests will prompt the adoption of all measures which in your conservative judgment may appear necessary.

The condition of affairs at Kansas City is not all that could be desired. Of the many shipments of cattle from quarantined districts, *en route* to Kansas, but 21 head have gone into quarantine; the remainder have declined to undergo the expense and detention imposed by our regulations, and, in most instances, have been sold in the Kansas City market. Whether any of these animals had ever been exposed to pleuro-pneumonia, I have no means of knowing; but if they had been, the disposition of them on our borders, and in the market on which we largely depend for the sale of our cattle, makes it possible to have an outbreak of this disease at any time, at a point where it would prove most disastrous to our interests.

I have called the attention of the State Veterinarian of Missouri to the situation, who replies that he has no authority to prevent the objectionable practice. If this practice continues, I would respectfully recommend that all Missouri cattle be classed with those of infected States, and prohibited from entering Kansas unless they shall first undergo a ninety days' quarantine.

GLANDERS AND FARCY.

The number of requests for the inspection of animals suspected of being infected with glanders is not quite so great as during 1885. Sixty-six counties have reported infection during the year, of which number 35 have been in whole or in part inspected. In these 35 counties, 117 animals have been found with the disease, of which number 92 have been killed. The remainder are held in quarantine.

The inability of the State Veterinarian to inspect without delay, or even to inspect at all, the many cases of this disease reported, has given rise, very justly, as it seems to me, to many complaints at the unjust workings of the law, and at the same time has imposed very serious burdens on many innocent owners of suspected animals. As the law requires, most cases of glanders are reported to the sheriff of the county wherein they exist, and by him are placed in quarantine. Since a considerable number of the cases reported prove to be something other than glanders, it would seem that some means should be provided whereby an inspection of reported cases might be made without delay. To lock up, by authority of law, the only team a farmer owns, without giving him in return the early inspection services to which he is entitled, is not right. Furthermore, it is one of the greatest incentives in preventing the report of many cases of the disease.

In attempting to suppress this dangerous disease, several serious obstacles are encountered. The simple fact that it is so insidious in its nature, makes it one of the most difficult to deal with. The first obstacle met is the very uncertain period of incubation. How short this period may be is not positively known, although experimental inoculation shows it to range from three to twenty days. But where exposure takes place in the usual manner — by contact of the healthy with the diseased animal — the period of incubation has been observed to cover more than twelve months. As a rule, however, if no sign of the disease is discoverable, on expert examination, at the end of three months after exposure has happened, it may reasonably be expected that infection has not occurred. Another obstacle which presents itself is the very mild development of symptoms so often met with in this State, due no doubt to the dryness of our atmosphere. It is by no means exceptional to find an animal which has been infected with glanders for months, showing but a little discharge from the nostrils, and this only at intervals, with no enlargement of the submaxillary glands, and with all of the apparent symptoms of good health. Such cases prove to be the most dangerous, for the reason that they give no sign by which the public may be warned of their true condition, and as a consequence they mingle with our healthy animals with impunity. Finally, the majority of horse-owners seem to be impressed with the idea that they were born with a full knowledge of the horse and all of his ailments. It is useless to tell such individuals that a glandered animal often lives five or six years, maintaining during the time fair flesh, a sleek coat, and the ability to perform hard labor. It is equally useless to tell them that the farcy bud, the glanders nodule and the glanders ulcer, found in the mucous membrane of the nose, are specific indications of the disease about which no mistake can be made, for these things do not comport with their preconceived idea of what glanders ought to be, and consequently they do not believe that these evidences constitute sufficient grounds on which to base a diagnosis.

But however diverse may be the opinions entertained by the laity, as to

what constitutes glanders, the fact should be patent to all who give the matter thought, that a disease which is incurable, and which is becoming more widespread and prevalent each year, causing not only the loss of many of our most valued animals, but human lives also, is one worthy of the intervention of the State in the matter of its suppression.

Glanders does not originate spontaneously, hence it can be killed out and prevented. All civilized countries believe in the necessity for its extermination. All armies appreciate fully how soon it can destroy the efficiency of their cavalry and transport service. Even in our own army, all cases of glanders and farcy are destroyed as soon as discovered. The same measures should be enforced in this State.

That our general law on the subject of contagious diseases permits of the destruction of glandered animals is true, but that little can be accomplished in the way of exterminating the disease at present is due to the following circumstances: There are so many suspected cases reported that the State Veterinarian cannot inspect them all; there is no authority for the employment of assistants; the expense attending the destruction of a glandered animal, without the consent of the owner, often costs the State more than a healthy animal is worth; destroying glandered animals for the benefit of a community, without compensating the owner for at least a part of his losses, does not meet the approval of a majority of the people of most communities; a majority of the owners of glandered animals would rather trade them away, or sell them at any price, than permit of their destruction by the State, under the law as it now stands; many condemned animals are stolen (?) and taken to other counties, where they establish new centers of infection; and, lastly, there is an unrestricted traffic in animals affected with this disease, between this and other States.

These difficulties, I believe, could be overcome by the passage of an act containing provisions similar to those to be found in the bill which your Board recommended in your last report. I therefore would urgently request your Board to recommend such changes in the laws as were contemplated in the bill referred to.

HOG CHOLERA.

True to the history of previous visitations of this great swine plague, the high tide of its mortality was reached last year, and we find now that the disease has largely disappeared from the State. But that we shall again, in the near future, experience another outbreak just as serious and extensive, cannot be doubted by anyone acquainted with the peculiar history of the malady. To adopt such measures as will prevent a repetition of our recent enormous losses, would be but prudent forethought. I therefore beg to renew my recommendations of last year, that section 22 of the sanitary law be repealed, so that this disease may be dealt with in the same manner as other malignant, contagious, and infectious diseases.

TEXAS FEVER.

The losses from Texas fever during the year, in so far as I have been able to learn, will hardly reach \$5,000. Most of these losses happened from steers becoming infected, while on the road to market, outside of the State. The efficiency of our law on this subject, after an experience of two years, can no longer be questioned. Outside of the losses which result from purchasing animals already infected, the cattle interests of the State are fully protected by this measure.

BLACK-LEG IN CATTLE.

Whether the diminished number of outbreaks of this disease within the State is to be attributed to the information furnished by this office, is a question I cannot answer, but it is a fact, nevertheless, that during the last three years the number of cases reported has continually grown less, until now the disease is rarely heard of.

INDIGESTION IN CATTLE.

SYNONYMS:—*Dry Murrain; Bloody Murrain; Impaction of the Stomachs; Stomach Staggers; Maw-Bound; Enteritis.*

Early in the autumn so many cases of this trouble were reported that I prepared a special report on the subject, which by request was published by the Secretary of the State Board of Agriculture. The demand therefor was so great that nearly all of the 5,000 copies printed were furnished to the public within thirty days. I therefore transmit herewith a copy of the same, with the request that it be republished as a part of our annual report:

DEFINITION.

Under the head of *indigestion*, I propose to treat of all those derangements of the digestive organs which are so common to cattle in this State. While the lesions produced by these complaints differ very materially, the symptoms of all are so closely grouped together, and the causes so nearly related, that to treat of each one separately would only serve to confound the readers for whom this report is intended. The object sought in presenting this article to the public is to direct the attention of stock raisers to causes which produce these complaints, and the means and measures necessary to prevent them.

Dry murrain is used to designate that condition in which marked constipation exists, without any organic disease of the digestive organs. When the discharges from the bowels are bloody, and they may be either hard or soft, the trouble is called *bloody murrain*.

When the first stomach, or rumen, is packed with undigested food, the complaint is called *impaction of the rumen* (paunch). When this condition is found in the third stomach it is called *impaction of the manyply*. (The second and fourth stomachs are never impacted.) Whenever from over-distention of the first or third stomachs, the functions of the brain are so

deranged that the animal staggers in his gait, turns in a circle, or stumbles as he walks, the disease is known as *stomach staggers*.

Maw-bound means simply that the contents of the maw, or first stomach, are prevented from passing onward in the process of digestion; in other words, it is impaction of the rumen.

Enteritis, in the broad sense, is used to designate inflammation of the bowels, of the stomachs, or of both.

GENERAL PREVALENCE OF THE DISEASE.

The losses of cattle in this State, resulting from derangement of the digestive organs, undoubtedly exceed the losses produced by all other causes combined. While the disease is occasionally seen during the spring and summer months, it is most common during the autumn and winter; and while no part of the State is free from the complaint, it is most common in the great corn-raising counties. The general prevalence of the disease, and consequently of the mortality, is determined largely by the character of our seasons; for upon these seasons the quality of our cattle-food greatly depends.

The one great cause of indigestion in cattle, is the use of much dry and innutritious food throughout a great part of the year. An occasional case of acute indigestion, or of enteritis, will be found in animals kept on rich food; but these are exceptional cases, and the cause therefor is not always to be found in the nature of the food.

Unfortunately, it is the custom in this State to feed stock cattle largely upon corn stalks which have been left to ripen in the fields, and upon grass which has been deprived of most of its nutritive qualities by reaching maturity before being made into hay. As is well known, when grass, wheat, rye, millet, and corn are allowed to ripen on the ground, the stalk contains but little nutritive matter, being composed almost entirely of indigestible cellulose and woody fiber. Even the buffalo grass, which in time gone by was considered a superior article of winter food for cattle, has of late years lost much of its vaunted reputation, owing to the late autumn rains washing out the most of its nutritive elements. Such food, poor in heat-producing elements, is not adapted to the proper maintenance of the functions of life. Not only is it deficient in quality, but by reason of its poverty it imposes an extra tax upon the digestive organs, in that they may extract from the mass the little nutriment which it may contain. Too often this expenditure of force in the process of digestion is greater than can be replaced by the small percentage of matter utilized. The greater the supply of food, the sooner does the digestive machine wear out. In other words, the ore is too poor to pay for the crushing.

True it is that many cattle do manage to maintain an existence on such food until the spring grasses insure a new lease upon life, but surely there is no economy in such a poverty of condition.

Another cause of indigestion is to be found in musty hay, straw and

fodder. Of these three, musty straw, and particularly oat straw, is the most common. Musty fodder is rather rare, for the reasons that but little corn is cut up, and when it is it is so ripe that little curing is required. Rotten corn when left in the fields at the time of gathering may prove productive of serious digestive derangements to cattle turned into the stalks to pasture. The small percentage, however, of such grain, gathered with the crop, is not likely to do any harm. But the refuse from cribs in which corn has been stored should never be used for food, since it is exceedingly dangerous, particularly to horses and cattle.

As to whether the smut of corn is dangerous when eaten by cattle, seems to be an open question. The majority of the writers on the subject imagine that it is; and yet, in so far as I can learn, all experiments made in feeding it, even in very large quantities for many days at a time, have been unattended by any serious results. From my own observations, I am led to the conclusion that it is not poisonous, and that if it has any unfavorable influence on the animal eating it, this influence is limited solely to the tendency it may have to produce impaction.

But a deficiency in the quantity and quality of the food supply, stands not alone as the cause of an excessive mortality among our stock cattle; want of shelter and poor water lend helping hands in this waste of wealth. Want of shelter is simply a waste of fuel, for the animal temperature must be maintained at the normal standard of 100°. If it falls much below this, the animal dies. To sustain this temperature requires the constant conversion of food into heat. If food is not supplied from without, the animal must fall back on his own store house of fat. Anything which increases the loss of body heat increases the demand for food. Exposure to bleak winds and low temperatures tend to exhaust the heat of the body, and this in turn proves dangerous by impairing all life functions, particularly that of digestion. These reasons in part account for the increased mortality among cattle which attends all our cold spells of winter.

Want of water is not less dangerous than want of food and shelter. About seventy pounds of water per day are required by a steer weighing a thousand pounds, while kept on good food. Very rich food may be digested with a lesser quantity. The more dry and innutritious the food, the greater must be the supply of water. Corn stalks and poor prairie hay require the consumption of from ninety to one hundred pounds of water per day for each animal of a thousand pounds. This immense amount of water must be raised to the temperature of the animal before it becomes a part of himself in the intricate processes of life. This can only be done by the expenditure of animal heat, which must be replaced primarily by the process of digestion. It follows, then, that the colder this supply of water, the greater is the task of heating it to the normal temperature of the body. In other words, very cold water for cattle in winter weather is a waste of food. And not only is it a waste of food, but it is also detrimental to digestion,

for it largely arrests this function until the water has reached the temperature of the body. Instinctively the unsheltered brute drinks sparingly of very cold water in winter weather—a precaution not always unattended by danger, for it may excite a fatal impaction of one or both the stomachs.

A deficient supply of water is detrimental for still another reason; for without an ample quantity the nutritive elements cannot be extracted from the food, and as a consequence they are wasted by passing out of the body unused. At the same time, a stint in the water supply makes the process of chewing the cud slow, laborious, and often incomplete.

That the water supply, then, should be pure, plentiful, accessible, and not too cold in winter, must be apparent to all who give the matter thought.

Lastly, in this connection, it would seem that no argument should be necessary to prove that the owner is amply compensated for the care which he may give his animals; and yet there is so much wealth lost each year in cattle that die for the want of proper food and shelter, one is forced to the conclusion that too many owners are imbued with the idea that the border line of starvation is the economical high road to success in raising stock. From this belief, or at least from this practice, I emphatically dissent. It is not right, it is not just to the dumb brute, and it is not economical, to meanly care for the animal, which by virtue of its circumstances is deprived of the opportunity to care for itself.

SYMPTOMS.

The symptoms of deranged digestion in cattle are most characteristic. They vary of course within certain limits, according to the organ most affected, and the nature of the derangement. No one case will present all of the symptoms here enumerated, but the presence of several of the more prominent ones will enable anyone who is closely observant to make a diagnosis. The greatest losses occur from turning cattle into stalk fields, and the symptoms in these cases generally appear within a few hours after the animals have gratified their appetites. It is quite common to find one or more of a bunch dead the next morning after their first experience in the stalks. At other times no sick ones are seen for two or three days, and even a week or ten days will elapse before the last will sicken from a single meal made in the stalk fields. In one outbreak which I saw this fall, of 27 animals turned in the stalks one afternoon 14 were dead within 26 hours. In another, 6 died during the first night; in another, 14 died in 10 days, and three were sick; in another, 11 out of 23 died within two weeks; and in still another, 23 out of 47 died within four weeks. These are by no means exceptional examples.

When an animal has been kept for a long time on poor, coarse food, the symptoms are more slowly developed and death not so sudden. In these cases the animal grows poor, the bones stick out, the flanks tuck up, the back is arched, the coat is rough and wiry; the limbs are weak, and exposure causes a severe fit of shivering. An attack of indigestion is now ushered in

by a loss of appetite, a failure to chew the cud, a dull, sunken, staring appearance of the eyes, a more or less discharge of saliva from the mouth, grinding of the teeth, trembling of the muscles—particularly in the flank—knuckling of the hind fetlocks, stumbling over slight inequalities of the ground, unsteadiness of the hind parts when walking, straining to pass manure, which is hard, dark colored, and generally covered with shreds of mucus, and often spots of blood; the frequent passage of small quantities of urine, complete paralysis, and death. In some cases, the first thing noticed is that the animal leaves the herd and stands by himself, refusing to eat or drink. In others, he stands with head erect, the eyes glaring, ready to run at anything which comes near him. In others, he stands and bawls at frequent intervals. Or he may have repeated spasms, in which he falls to the ground, where he remains until the fit has passed, when he arises as if nothing had happened. In other cases, the first symptom seen is a wild rubbing of the head or hind quarters against a post or tree. The itching is so intense in many of these cases, that the hair is rubbed off and the skin lacerated, until the blood flows freely. For some unknown reason, the right side of the head at the base of the horn or root of the ear, is the part most often injured in this manner. In some cases the hind fetlock joints are torn with the teeth. In some the animal has spells of complete blindness, during which he stumbles around and over objects like a drunken man. In many instances they persist in turning around in a small circle. Some hunt for water, and while they rarely drink much, often die in the stream or on its banks. Some will wander aimlessly around or stray miles away and die. Some have rigid contractions of the muscles of the neck and back, so that they cannot place the head to the ground. Some seem to improve after two or three days' illness, then relapse and die. Many die in from two to ten hours' time, while others live for as many days. Some bloat before or shortly after death, while many never bloat at all. While the majority of cases have the most marked constipation, with more or less colicky pains, some have diarrhoea. The young as well as the aged are alike susceptible. As a rule, the heartiest eaters are the first to sicken and die. The mortality is very great, as but few recover from an attack.

POST-MORTEM APPEARANCES.

When a number of animals have been turned into stalk fields, and the next morning from one to ten per cent. are found dead, a post-mortem will show the first stomach filled with a great mass of fodder which is only slightly masticated. The third stomach is filled with dry food, often so dry that it will crumble like ashes. This, in many instances, is all that can be found. In cases which live longer, and in which dry fodder has been the only food for some time, the first stomach often contains a great mass of fodder, corn husks, coarse grass, etc., so entangled that it can scarcely be torn apart. This condition of the food of course prevents it from being raised in the form of a cud for rechewing, and as a consequence it remains

in the stomach as a foreign body which cannot escape, until it causes death. In other instances the condition of the first stomach will be found normal, with the exception of patches of congested mucous membrane. The third stomach may then be found packed with very dry food, or it too may be in apparent healthy condition. In these cases the fourth or true stomach is found with a uniformly reddened mucous membrane, or with great patches congested and inflamed. If this stomach is healthy in appearance the intestines are the seat of inflammatory changes. They may present dark-red or purple patches, confined to the lining membrane, or the whole substance of the intestine may be discolored and blackened. The liver is often spotted and very easily torn, while in nearly all cases where impaction is present the gall bladder will be found distended with a thick fluid. This distension may be so great that all the tissues seem to be discolored with the brownish-yellow pigment of the bile. The kidneys are often congested. The lower bowels generally contain dry masses of manure, coated with mucus and blood. The lung on the side next to the ground at the time of death is always black from engorgement with blood. The other lung is often spotted with congested patches. The windpipe may be filled with a frothy mucus. The heart is often bloodshot on the outer as well as on the inner surface. The heart sac often contains an excess of fluid varying from one to sixteen ounces in quantity. Occasionally this fluid contains a mass of coagulated febrin. Quantities of fluid of the same character may be found in the chest. The cavities of the heart sometimes contains a dense clot of blood, which is whitish in color near the center. The bladder is often distended to its utmost with urine.

My post-mortem examinations of the brain and spinal cord have not been extensive enough to warrant a conclusion as to the changes which may generally be found in these organs. In those cases, however, where the patient has been wild and viciously disposed, followed later by complete loss of sensibility, I have found the brain congested. Where the hind parts first showed loss of power, the spinal cord in the lumbar region showed slight congestion and some effusion of a clear fluid into the canal. In old cases where the disease has lasted for several days, and where the cause was to be attributed to the long-continued use of coarse, innutritious food, the post-mortem appearances have been most interesting. In these cases the subject may have carried a fair amount of flesh, but the post-mortem reveals an entire absence of fat among the muscles, around the heart, kidneys, on the intestines, and in the bones. In place of fat, however, is found an amber-colored, gelatinous matter, which is clearly transparent. The bones were brittle, and could easily be cut to pieces with a knife. The bone cells or cavities were filled with the peculiar gelatinous matter. On opening the spinal canal the spinal cord, in those cases where paralysis of the hind parts was marked, was atrophied and white, and surrounded in the lumbar region by the same gelatinous matter as found in other parts.

That paralysis of the digestive organs happens in many of the cases of indigestion, particularly where the rumen and manyply are packed with food, I believe is true. It seems to me that this only will explain the cause of many of the early deaths in some outbreaks. If derangement of the organs of digestion can so readily produce paralysis of the hind limbs, it is fair to presume that this paralysis might begin at the seat of the primary trouble. The cause and nature of the lesions of the nervous system, however, deserve a further investigation and study.

TREATMENT.

The treatment of but few diseases is attended with such unsatisfactory results as this one. No matter what measures are resorted to, but few of these cases recover. The indications for treatment, however, demand that the digestive organs shall be relieved of all indigestible matter, and for this purpose a full dose of physic is administered, consisting of—

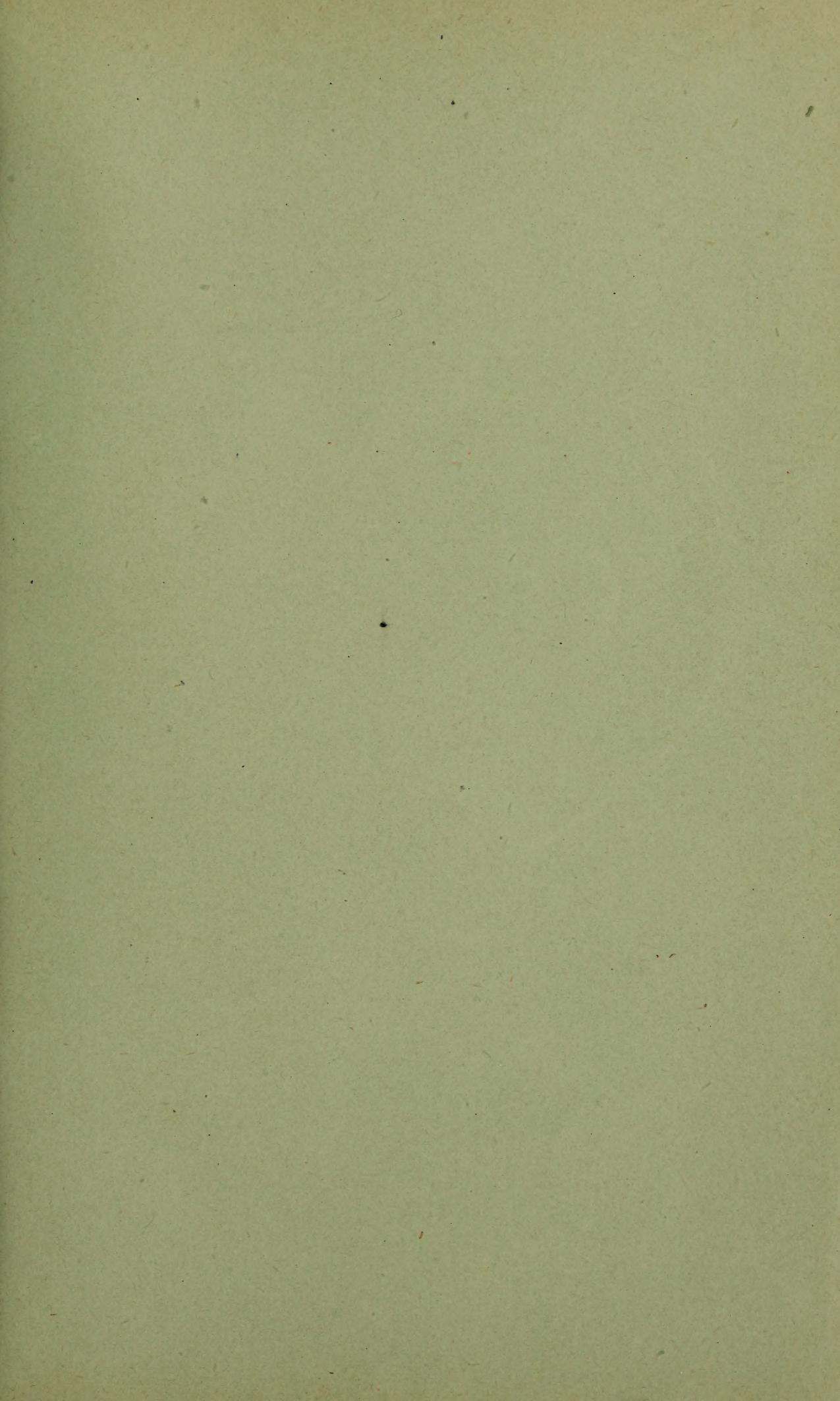
Epsom salts, 1½ lbs.	Ginger, 2 oz.
Nux vomica, 2 drachms.	Warm water, ½ gallon.

Four hours afterward give 1½ pints of raw linseed oil. To stimulate the stomachs to a performance of their functions, give every two or three hours—

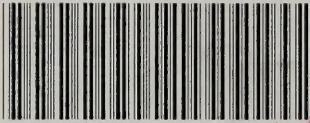
Aromatic spirits of ammonia, 2 oz.	Cayenne pepper, ½ oz.
Salt, 1 oz.	Water, 1 quart.

If the animal will not drink freely, he should be drenched with tepid water every four hours. The food should consist of oat meal, corn meal, or bran slops. The bowels should be relieved by frequent injections of warm water. If the first stomach is filled with food, a veterinary surgeon should be called in to remove the matter by opening the flank. If the stomach is distended with gas, it should be tapped upon the left side with a trocar. If the abdominal pains are severe, they may be relieved by 2-oz. doses of laudanum, repeated every four hours. If the patient is on full feed, and the attack is acute, the oil only should be used as a physic, and the stimulants may be omitted from the treatment. Diarrhoea may be present, and yet the stomachs may be impacted so that the diarrhoea alone is not a contra-indication for the use of full doses of physic.

In this, as in all diseases, the main object sought should be the *prevention of causes*. Coarse, dry, innutritious food should never constitute the exclusive diet of cattle. If the hay is poor, corn, bran, sorghum or millet should be added. Sorghum is not only palatable, but by reason of the large percentage of juice which it contains tends to overcome any disposition to constipation. If corn stalks are to be used, they should be cut before they are ripe, and cured in the shock. If they are to be pastured in the field, see to it that the cattle are not turned in until they are well filled with other food and water. A hungry animal should never be turned into a stalk field. Let the cattle have daily access to a mixture of salt, Epsom salts, and salt-petre, mixed in the proportion of 45, 45, and 10, respectively.



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